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BAIN

ROYAL COMMISSION OF INQUIRY INTO CERTAIN
DEATHS AT THE HOSPITAL FOR SICK CHILDREN AND
RELATED MATTERS.

Hearing held
8th floor
180 Dundas Street West
Toronto, Ontario

X: Tobias (alid)
Lamek
E. A. Cronk
Thomas Millar

The Honourable Mr. Justice S.G.M. Grange

Commissioner

P.S.A. Lamek, Q.C.

Counsel

E.A. Cronk

Associate Counsel

Thomas Millar

Administrator

Transcript of evidence
for
November 8, 1983

VOLUME 62

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1 ROYAL COMMISSION OF INQUIRY INTO CERTAIN
2 DEATHS AT THE HOSPITAL FOR SICK CHILDREN
AND RELATED MATTERS.

3

4 Hearing held on the 8th Floor,
5 180 Dundas Street West, Toronto,
Ontario, on Tuesday, the 8th
day of November, 1983.

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8 THE HONOURABLE MR. JUSTICE S.G.M. GRANGE - Commissioner
9 THOMAS MILLAR - Administrator
10 MURRAY R. ELLIOT - Registrar

11 - - - - -

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24

25 (Cont'd)



1

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2

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---Upon commencing at 10:00 a.m.

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THE COMMISSIONER: Yes, Mr. Lamek.

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MR. LAMEK: Just before Mr. Tobias begins again, Mr. Commissioner. First of all, let me say I hope this doesn't mean we are going to be sitting Friday this week, I gather it does not.

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Just a brief word about scheduling of witnesses, Mr. Commissioner, so that counsel may be aware of what I have in mind. We expect today to complete Dr. Bain's cross-examination and re-examinations, and then I have no other witness today, so I will ask that we rise early if we should complete Dr. Bain's evidence before the normal adjournment hour.

THE COMMISSIONER: We could ask

Mr. Tobias to be a little longer than usual perhaps.

MR. LAMEK: Or perhaps even a

little shorter.

Tomorrow morning I shall be calling Dr. Stewart MacLeod who is the Head of the Division of Clinical Pharmacology at the Hospital for Sick Children. I would expect his evidence will take us through tomorrow and perhaps into the morning of Thursday, probably into the morning of Thursday. Then of course you have set aside Thursday afternoon



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for argument of various matters that are before you.

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As to the plans for next week I am

sorry I am not able yet to commit myself. We are at
that stage of the Inquiry, sir, where we are calling
in now out-of-town professional people and we have
to meet their scheduled commitments as well as our
own. As soon as I have some word on next week I will
let you know as well as all other counsel.

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THE COMMISSIONER: All right. Mr.Tobias,

you were worried about responding in time for

the 10th, are you still worried about that?

MR. TOBIAS: No, I am not concerned

about that, Mr. Commissioner. I take it given our

unexpected holiday of yesterday, and given the fact

we may very well finish early today I certainly will
have time to get my reply in order.

THE COMMISSIONER: Yes, all right.

I think that will be best, it will give you an

opportunity to get things resolved next week.

MR. TOBIAS: One point just by way

of clarification. I thought in the minds of some

counsel there may have been some degree of confusion.

The argument Thursday, do I understand it correctly

that that argument is only to be on the point raised

by Mr. Sopinka with respect to the release of the



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police reports, and that there will be no oral argument with respect to those matters you requested written submissions on.

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THE COMMISSIONER: You understand right, except that there also is added to that Mr. Olah's problem about the Notice under Section 5 of the Act.

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MR. TOBIAS: Thank you, sir.

THE COMMISSIONER: Yes, Mr. Knazan?

MR. KNAZAN: With respect to that, I also was confused. It seems to me that perhaps I am missing something, that arguing on Section 5-2 as Mr. Olah wishes to is a bit premature since 5-2 says:

"No finding of misconduct on the part of any person shall be made."

If you were to determine after receiving the written replies that no names shall be named, it seems to make the point unnecessary, but maybe I am misunderstanding it.

THE COMMISSIONER: Well, I don't - yes, Mr. Olah, are you going to solve the problem for me?

MR. OLAH: I am hoping. It may well be that my friend is correct, but it seems to me that



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there are two different matters that may possibly lead to the same conclusion, certainly with respect to my client, they are separate and different paths that may ultimately lead to the same conclusion, Mr. Commissioner, or they may not. So it seems to me that it may be appropriate; certainly my concern is very major and very urgent and I would like to have the matter resolved.

THE COMMISSIONER: I think we will

leave it as it is for the moment, because I certainly want to know, I want to know - the main reason, I know it seems peculiar to have some things done in writing and some things done orally. The reason I want to have those two done orally is I want a fair amount of discussion with counsel as to how it should be done.

First of all, the police report, because there are a great many things in the police report that as you can imagine are quite irrelevant to this Inquiry.

Secondly, as to the Notice, I want to be fair but I don't quite know how I can be fair, because - at least be fair in the sense Mr. Olah wants me to be fair, because the evidence is not in.

This is a problem we face, and I think



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we face it in almost every inquiry and each inquiry solves it in a different way. My approach to it was to take the worst possible view at the very beginning, have everybody represent it and then if it developed that there was no evidence, to release them.

The one thing I don't want to do, and I may as well warn you about this now, I don't want to reach the position where we have to give some kind of notice, and then we have to recall evidence, because that is something I am very much opposed to doing, and I would think most of the witnesses would be equally opposed and most of counsel would be opposed as well.

So what we want to do is to conduct this Inquiry in a manner that will not be prejudicial, or unfair to someone, but at the same time will not mean we are wasting our time as we go along. I must confess that initially I thought that the problem of the nature of the report was one for me, and one for me to decide when I was writing the report. I have since come to the view that it would be unfair to those people who might be named that they should know of that danger, if it is a danger, if I decide that way, and they would be able to take whatever action they want to take respecting it before the damage



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2 is done. So I think we will just leave it that way.
3 The two things we are going to argue on Thursday
4 afternoon are the Notices to the people and the
5 police report. All right. I think in that order
6 too, because I understand Mr. Percival will be late.

7

MR. YOUNG: That is correct,

8

Mr. Commissioner.

9

THE COMMISSIONER: There is no need
unless you have some argument to make, there is no
need to appear on Thursday afternoon, but anybody
who does appear certainly I will receive any argument
they have. All right, now, Mr. Tobias?

10

MR. TOBIAS: Mr. Commissioner, yes.

11

Thank you, Mr. Commissioner.

12

DR. HARRY WILLIAM BAIN, Resumed

13

CROSS-EXAMINATION BY MR. TOBIAS: (Continued)

14

Q. Dr. Bain, when we concluded on
Thursday last I was about to ask you some questions
regarding your conclusions, particularly with respect
to the Hines case. Now, as I understand it in
Section 5 of your report under the heading
"Conclusions", and I am sorry, I don't seem to have
a page reference, it would appear to be page 34,
however. I am referring now to Exhibit No. 48,
Mr. Commissioner.

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You say in paragraph 5:

3

"Baby Hines almost certainly had
Sudden Infant Death Syndrome."

4

Now, I believe when you were giving
evidence to Mr. Lamek, you said that if that were to
be modified you would say: "Baby Hines certainly
had missed-Sudden Infant Death Syndrome and almost
certainly had Sudden Infant Death Syndrome."

5

Then later on in your evidence, when
you expounded upon that, I believe that a fair
summary of your evidence was that Hines certainly
did have missed-SIDS and may have had Sudden Infant
Death Syndrome.

6

Now, I take it that your current
review right now is one of less than absolute
certainty regarding the Sudden Infant Death Syndrome
as the cause of death, is that correct?

7

A. I think if you go on to No. 7
in the conclusions, and that is really why I pointed
out at the beginning that I wanted it made clear,
was that insofar as the digoxin data as they pertain
to Baby Hines that certainly had to be looked at
and raised the question as I said. So the answer
to your question is, yes.

8

Q. So we know one element which

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causes some reservation is the finding of digoxin.

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A. Certainly that has to be
clarified and clarified by the experts.

5

Q. I accept that, and I think
that is fair. Now, are there any other elements
at all of the diagnosis that caused you any particular
concern, or reservation?

8

A. None whatever. That is the
diagnosis of missed-SIDS we are now saying?

10

Q. I am sorry?

11

A. That is the diagnosis of
missed-SIDS is what you are saying?

13

Q. Let me be more specific, let
me be more specific. Are there any other reservations
with your concluding, to your satisfaction, that the
baby died of Sudden Infant Death Syndrome?

15

A. Well, we already answered that
a moment ago, I said we modified it.

18

Q. I understand, and I am saying
other than the digoxin data, is there anything else
that causes you any reservations?

21

A. No.

22

Q. Now, Dr. Becker indicated to
us in his evidence, and this evidence appears at
Volume 38, page 7713 through to 7720, Mr. Commissioner,

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and it is too lengthy to quote. The sum and substance
of it was an exchange between yourself, Mr. Commissioner,
and Dr. Becker, it was suggested by the Doctor, or
by you and the Doctor agreed, that one can have an
episode of missed-SIDS, survive that episode and
yet still live a full life.

7

A. That is what missed-SIDS means,
and although the risk goes up considerable ---

9

Q. Yes.

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A. --- it is not 100 per cent

of the people who have missed-SIDS are going to die
of SIDS. In fact, I don't know what that percentage
is, but in oh, just sibs of SIDS have a double
incidence, but that is still a small number. I don't
think anybody has had enough missed-SIDS to be able
to say what that figure is. You know, if I were to
take a ball park guess, and that is all it would be,
it would probably maybe be in the neighbourhood of
10 per cent or so.

THE COMMISSIONER: 10 per cent which

way?

THE WITNESS: If a person had a

missed-SIDS, sir, they would have a real SIDS that
would kill them in the next month or so.

THE COMMISSIONER: 10 per cent of



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missed-SIDS would die of SIDS?

3

THE WITNESS: Would die of SIDS.

4

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THE COMMISSIONER: Yes, I accept

that.

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THE WITNESS: It might be 50 per

cent and it might be 10. Because you see in order to

be statistically sound everybody has to accumulate

about 500 cases which is what I think the statisti-

cians tell me before they can make any such

conclusions and nobody has got more than 10 or 20

per cent.

12

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MR. TOBIAS: Q. Fine. I do take it however, that you do agree that missed-SIDS itself is not necessarily always terminal?

15

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A. We have said that because it is missed.

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Q. Now, with respect to the

various indicia of missed-SIDS that Dr. Becker testi-

fied about, and I want to be very specific so I

will outline them for you. He talked about gliosis

of the vagal nuclei or brain stem scarring;

persistence of brown fat; extramedullary hematopoiesis;

and I believe the fourth one was ---

A. I think the thickening of the

pulmonary arteries which is what he referred to.



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Q. Yes, thickening of the
pulmonary arteries.

A. That is the big one, if you
change those around, that is the important one.



DP.jc
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2 Q. Now, he gave evidence that one
3 would find in a situation where you had missed-SIDS,
4 one would find these four pathological indicia, and
5 that they start at the onset of the missed-SIDS
6 episodes. Do you agree with that?

7 A. You are not going to find them
8 because you find them at post mortem, so if they
9 missed they are not dead and they are not going to be
able to find them.

10 Q. This is not what I am asking
11 you, though, Doctor. Let us assume we had several
12 missed-SIDS episodes and the child ultimately
13 succumbed to Sudden Infant Death Syndrome. You would
14 find those, the pathological indicia, at post mortem?

15 A. I think the figure is, from
16 Dr. Naeye who started this, Dr. Richard Naeye,
17 N-a-e-y-e, that I think 60 per cent or 64 per cent
of his series of SIDS deaths showed these changes.

18 Q. All right, fine.

19 A. Not all of the changes, because
20 Dr. Naeye came in with the thickening of the pulmonary
21 arterials and the brown fat and the hematopoiesis and
22 those things. It was Dr. Becker and the others who
23 have added these things in the brain stem and the
carotid body which are relatively new findings. I think

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B.2

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2 they were; at least they contributed to the literature.

3

4 Q. Now, if we had a child who
5 was susceptible to SIDS and who had several missed-SIDS
6 episodes during life, and then I suffocated that child
7 and we then did a post mortem, would you not expect,
8 at least with a 64 per cent chance of probability, to
9 find those four pathological indicia?

10

A. You would find them in 64 per
11 cent. You would not find them in 46 per cent - or 36,
12 sorry about that.

13

Q. So you would agree with me that
14 whether or not the child died from Sudden Infant Death
15 Syndrome the episodes of missed-SIDS during life are
16 perfectly consistent - sorry - the four pathological
17 indicia, the finding of that, is perfectly consistent
18 with the missed-SIDS episode even if the child did
19 not ultimately die from SIDS. Do you agree with that?

20

A. Again, all I can say is if they
21 don't die, and a lot of that information comes from
22 people who did in fact have missed-SIDS and then had
23 SIDS, and, naturally, that is when the post mortem is
24 going to be done and those are the findings, so the
25 current feeling is that those findings are present in
SIDS in 64 per cent and would be present in the same
percentage, I take it, of missed-SIDS, who eventually die.



B.3

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2 Q. You would accept that they
3 would be present in 64 per cent of missed-SIDS?

4 A. That is right.

5 Q. That would be there whether or
6 not the child ultimately succumbed to SIDS or not?

7 A. I guess that is a reasonable
8 thing, but you know --

9 Q. All I am saying, Doctor, and
10 I would ask you --

11 A. I think I understand what you
12 are saying.

13 MR. LAMEK: Perhaps Dr. Bain could
14 finish his answer.

15 THE WITNESS: I think I understand
16 what you are saying but SIDS is a very difficult
17 condition to deal with, as you know, because by
18 definition it is a syndrome, it is not a disease.

19 MR. TOBIAS: Q. Yes.

20 A. The last time I had occasion to
21 write something on it, which was eight years ago, there
22 were 72 theories then and there have been quite a few
23 more since that time. At times parents, and any of
24 you who are parents here I am sure would know this,
25 you go in to pick up your baby, and if it is your
first baby you worry more about it than anything else,



B.4

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2 and the baby does not seem to be breathing and you
3 pick it up and shake it and the baby breathes. Is
4 that a missed-SIDS? Probably not. So the diagnosis
5 of missed-SIDS is even more difficult than the
6 diagnosis of SIDS.

6

7 If there is some way to document
8 missed-SIDS, fine, but so much of it depends as I
9 said the other day on the historical events and the
physical exam.

10

Once you start finding things, then
they take it out of SIDS. If you find something wrong,
then it no longer fits the classification. When I
say that, I mean, a cause of death for example, like
meningitis or pneumonia or something that was not
suspected, because the real finding is that in 85 per
cent you find nothing at post mortem. It is only in
15 per cent that you find things, aside from these
now subtle findings that are being described in the
larger numbers. So I think we are into semantics
here, and I will do my best to answer your question,
but it is a little difficult.

20

Q. I understand, Doctor, and I
appreciate all of those qualifications and the
difficulty that we are dealing with. Let me put this
proposition to you and ask you whether you would agree

24

25



B.5

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2 or disagree with it.

3 I am suggesting to you that if a
4 child had episodes of missed-SIDS but died from
5 something else, and I just ask you to take that as
6 an assumption --

7 A. Certainly.

8 Q. -- died from something other
9 than Sudden Infant Death Syndrome although he had
10 documented episodes during life of missed-SIDS, the
11 missed-SIDS episodes therefore could easily account
12 for the presence of those subtle findings of those
pathological indicia. Do you agree with that?

13 A. That is precisely what I said
14 in my conclusions. I really think I answered that
15 before. I have said that, yet if there are super-
added things then they have to be explored.

16 Q. Do you also agree with me,
17 Doctor, that Sudden Infant Death Syndrome itself is
18 basically a diagnosis of exclusion?

19 A. Nothing in medicine is a
20 diagnosis of exclusion. People have said that about
21 psychiatry for a long time and has led to a great
22 deal of trouble. I think it is a question of putting
23 together the facts and in SIDS the facts are that
24 at about three weeks of age, the baby may start to
25



B.6

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2 have some of these apneic spells, but the typical
3 thing is that the mother goes in, having put the
4 baby down usually at night, and after a feeding or
5 during a night, and goes in to pick the baby up
6 and the baby is dead. There may be some contributing
7 factors in things like that of a plugged nose or
8 something along those lines, but usually pretty
9 minimal. So it is not a diagnosis of exclusion in
10 the sense that - it is a very definite entity that
11 has a very definite history but, yes, you might say
12 if you don't find anything at autopsy then by that
13 definition it is exclusion because in our ignorance
we don't know what to look for.

14

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I might now enter into evidence, or
not, Mr. Tobias, there is a meeting that is taking
place in California next week at Disneyland and
perhaps everybody should go if we are --

Q.

I was about to say, Dr. Bain,

I was about to ask the Commissioner for his permission.
If it deals with Sudden Infant Death Syndrome, surely
I should be --

THE COMMISSIONER:

What is this

meeting?

THE WITNESS:

It is the American

Heart Association, sir, and to keep you busy, there

24

25



B. 7

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2 are 1,700 papers being given.

3

4 THE COMMISSIONER: That would keep
Mr. Tobias busy.

5 THE WITNESS: Of those, though, there
6 are two that are most interesting and the people who
7 sent - we have the abstracts - and the people who
8 send the abstracts just put enough in it to bait
9 your curiosity so you will go to the meeting, but
10 two of them are very interesting and one is the
11 Sudden Infant Death Syndrome suggesting that it is
12 a conduction defect, in the old business we have
13 talked about of sick sinus syndrome, and these people
14 have now studied the conducting system and they will
15 take, just as the other 72 theories, this will be
16 their theory and they think nothing else caused it,
but in fact there will be many, many things that
caused SIDS.

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The second one is still a more basic
one of the anatomical inside structure of the heart
which is called the anulus cordi which is sort of the
framework of the heart, and they are finding it quite
abnormal and the muscles seem to attach to it and
the nerves go through it and they are finding again
the nerve conduction system is short-circuiting these
and causing it.



B.8

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2 So they are saying we don't think
3 apnea is the primary thing, we think the primary
4 thing is heart and maybe something as subtle as the
5 conduction system on which nothing shows on a routine
6 autopsy examination.

7

8 So if I may enter these into - if
9 you wish?

10

11 THE COMMISSIONER: I think we had
12 better let Mr. Tobias take a look at them and see if
13 he wants them.

14

15 THE WITNESS: They are just little
16 excerpts.

17

18 THE COMMISSIONER: Where is this
19 meeting taking place?

20

21 THE WITNESS: It is going to be in
22 Anaheim - Disneyland, Anaheim, California.

23

24 THE COMMISSIONER: I don't think we
25 can afford that.

18

19 MR. LAMEK: There is a precedent
20 for counsel and Commissioner.

21

22 THE COMMISSIONER: It was one that
23 I would not like to --

24

25 MR. TOBIAS: Mr. Lamek, perhaps you
26 could enter this in as an exhibit.

27

28 MR. LAMEK: I have no objection to it
29 if you want to mark it.

30



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2 if you want to mark it.

3 THE COMMISSIONER: Which one are
4 we marking?

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MR. TOBIAS: These are all the same article?

THE WITNESS: There are two pages there. There are two articles. One is the bottom right and the other is the top left.

MR. TOBIAS: I think they should probably go in as one exhibit.

THE COMMISSIONER: I am sorry, is this ...

MR. TOBIAS: One is Sudden Infant Death Syndrome Conduction Study and the other is the relationship ---

THE COMMISSIONER: Oh, yours is just a copy?

MR. TOBIAS: Yes.

THE WITNESS: Yes.

THE COMMISSIONER: What number are we at?

THE REGISTRAR: 249.

THE COMMISSIONER: 249.

---EXHIBIT NO. 249: Abstract entitled:
Cardiovascular Disease in
the Young, dated October, 1983.

MR. TOBIAS: That article then would



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2 be Exhibit 249 then, thank you, Doctor.

3 THE WITNESS: So, in that sense, I
4 come back to the fact that, yes, to be fair it would
5 go along in a sense, diagnosis of exclusion, but that
6 doesn't sit well with us. It is not that you don't
7 think of anything else, you think of the clinical
8 features that fit, but insofar as pathological
9 findings to date has been, aside from those things
10 of Dr. Naeye and Dr. Becker's and now this there
were no findings.

11 MR. TOBIAS: Q. All right. Well,
12 rather than directing my attention to the principle
13 that it is a disease without specific pathology,
14 which I will get into later, all I was really
15 suggesting is this. I believe I correctly summarized
16 the general evidence when I say that we have heard
17 evidence from Dr. Phillips and Dr. Becker and several
18 of the other doctors and we have seen references to
19 this in the article by Kelly and Shannan, as well
20 as in the Centre for Disease Control Report that when
21 we talk about it being a diagnosis of exclusion, one of
22 the things that we are looking for is the exclusion
23 of other obvious or possible causes of death. Would
you go that far. Would you agree to that extent
it is a diagnosis of exclusion?

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A. Oh, certainly. But, you

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know, and I hate to, I don't mean to be nit picking
at all but, you know, for example, pneumonia,
90 per cent or 99 per cent of the pathologists
would say there is no evidence of pneumonia in
this particular patient. The people who are pushing
the theory - for a long time people pushed the
theory that all of these were due to unrecognized
pneumonia and if they looked and looked and looked
and looked they could find some increase in
inflammatory cells and they would say, there, that
proves it.

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So, you know, that depends. But in
an ordinary day-to-day post mortem examination by
somebody who probably wasn't interested in SIDS,
those findings would be as you have stated, that
is, next to nothing.

17

Q. All right, fine.

18

A. And there would be other

19

things, yes.

20

Q. In the case of Jordan

21

Hines in particular it seems to me that there are
two things that I have difficulty with. One you
have already averted to. You have indicated that
you really can't rule out digoxin toxicity?

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2 A. Right.

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Q. And we have to await the
outcome of the debate between the pharmacologists?

4

A. Yes.

5

Q. The other problem is this.

6

Are you aware from your review of the chart that at
some time a potential diagnosis of Sick Sinus
Syndrome was made and that conduction studies on
the heart were never carried out?

7

A. Well, yes, certainly,

8

and this is precisely why I have entered this into
the evidence this morning because someone who
makes - I don't know what Sick Sinus Syndrome is.

9

I know even less about that than I do about SIDS
because it is one of those catch things that becomes
a wastebasket that turns off all useful thinking.

10

Sick Sinus Syndrome was described as things that
happen in people after open heart surgery.

11

Q. Yes.

12

A. Because the surgeon was
obviously cutting around the nerves and there was
haemorrhage around them and caused trouble. Now
they are starting to talk about it occurring in
anybody whose heart slows down and speeds up gets
sent in as a possible Sick Sinus Syndrome. There

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is no way that I know of to prove it except these very, very fancy studies that are just coming to light and in these papers that are going to be presented and another paper recently that had some electro physiologic studies that had been reported. I could turn it in if you wish if anybody wants to read about that, I have a copy.

Q. Well, Doctor, let me expand it just a little bit. The evidence has indicated, and indeed you agree, that there was a possible diagnosis of Sick Sinus Syndrome made. Generally speaking in the case of Jordan Hines we can't with any degree of certainty rule out conduction problems generally, can we?

A. As I say, only as in the context of SIDS or missed SIDS.

Q. Well, let me ---

A. Because, you know, he had again the sort of findings that Dr. Naeye and Becker described. So, you know, you are into a syndrome. I hate to belabour the point but, you know, there was a thing that everybody in Toronto had for years was celiac disease. Well, it wasn't celiac disease at all it was celiac syndrome. As the years went by they discovered - this all happened in my time, so,



1

2 it means I am getting old I guess but they discovered
3 cystic fibrosis. So, a great big bundle came out
4 of the celiac syndrome and became cystic fibrosis.

5 They discovered food allergies and
6 on and on it went until somebody found that there
7 was an intolerance to wheat and that became gluten
8 intolerance which is celiac disease. There is still
9 a celiac syndrome. Lots of kids who have diarrhea
10 and failure to thrive and those things and people
11 loosely refer to them as celiacs, they are not.
12 There is celiac disease and there is celiac syndrome
13 and I think what you are saying here, well, has he
14 got Sick Sinus Syndrome.

15

16 All I am saying to you is, it is the
17 evidence now that people have said for years that
18 there is something wrong with the control mechanism
19 both of respiration and of heart.

20

21 Now, the control of the heart has
22 either got to be the nerves coming to the heart or
23 the nerves in the heart and that is your Sick Sinus
24 Syndrome perhaps. So, this paper may throw some
25 further light on it.

26

27 I am thinking of them synonomously
28 and I am saying that that is a very good thought but
29 to me it doesn't say because he has Sick Sinus

30

31



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2 Syndrome he doesn't have SIDS syndrome.

3

Q. Yes, I understand.

4

A. Okay.

7

5

Q. The two may very well be
related.

6

A. Probably the same thing.

7

May well or won't be the only cause, there will be
lots of causes of SIDS, yes.

9

Q. I understand. But you
agree with me that at the present time, given our
state of knowledge today, what you postulate really
are not - you can't put them much higher than
theories, can you?

13

A. I think that goes for
anything that you can't prove, it has to be a theory.

14

Q. No, no, but is that fair,
is that a fair statement?

17

A. I think it is fair; maybe
not in the light of what I just passed out to you
if the authors of those things are telling the
truth, it may be the wrong theory.

21

Q. But you would agree with
me, and I haven't read them, I would think their
findings are something less than absolutely con-
clusive?

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A. Oh, I wouldn't say that at all. They seem to think they are conclusive, or at least as one of the causes of SIDS. This is what they are postulating.

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Q. Okay, fine. In any event, we know two things about Jordan Hines, don't we. We know that we don't have the answer today about digoxin toxicity and since the conduction studies were never done we don't know if there were any conduction problems in his heart?

11

A. I think that is ---

12

Q. Is that a fair statement?

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A. Well, there was clinical evidence of at least Dr. Shams, the cardiologists up there felt that there were and from the point of view of what the baby did while he was listening to it, but insofar as anatomical, yes, you are correct.

18

19

20

Q. All right. And the clinical evidence that you are referring to I take it is the tachybradycardia?

21

A. Yes.

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Q. Okay, fine. Now, would you agree or disagree that essentially Sudden Infant Death Syndrome is a disease without specific



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2 pathology?

3 A. By definition then, I will
4 go through it again, by definition if you find
5 significant pathology then you say it wasn't SIDS
6 but on the other hand there are those subtle ones,
7 and I have said, that most people would say there
8 was no finding but certain pathologists who have
9 a vested interest in infection as the cause can find
10 some inflammatory cells. So, you know, it goes on
11 and on. I may be appearing to be talking in circles
but I am having trouble.

12 Q. No, no, sir, I think you
13 are being forthright. But let me put this proposition
14 to you. I specifically asked Dr. Becker whether it
15 was his view that these four pathological indicia
16 that he found were specific to Sudden Infant Death
17 Syndrome and he said in an unqualified way, yes.
18 He felt that if he found those that was indicative
of Sudden Infant Death Syndrome and nothing else.
19 Now, do I take it that you share that view?

20 A. I am not an expert in that
21 particular field. My understanding is that some
22 such similar things have been found in people who
23 suffer from chronic underventilation of their lungs
or chronic anoxia from other causes including people

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2 who live high up in the Andes.

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Q. Are you referring to chronic
hypoxia?

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A. I am referring to chronic
hypoxia. There are other causes of chronic hypoxia
and I understand that someone either has suggested
that those findings would be or they have said that
one could find, but nevertheless, Dr. Naeye feels
that whatever the cause there has been chronic or
recurrent hypoxia for at least two to three weeks
in order to cause those changes.

10

11

Q. All right. Now, in fairness
to Dr. Becker both in my cross-examination and in
giving direct evidence to Miss Cronk was that one
of the pre-conditions for a diagnosis of Sudden
Infant Death Syndrome was observed periods of apnea
during life?

17

A. Yes.

18

Q. Then he went on to say if
you have observed periods of apnea during life and
you have the four pathological markers of Sudden
Infant Death Syndrome, in my opinion that is
specific to Sudden Infant Death Syndrome. Would
you agree with that if you had those two things
in combination: observed periods of apnea and on

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11 2 post mortem you found the four pathological markers?

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A. But that is all you have is
4 just what you are seeing at post mortem.

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Q. Yes.

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A. And the current state of the
7 knowledge, yes, aside from those things that I have
8 said to you about people who live at 10, 12,000
feet.

9

Q. All right.

10

A. Yes.

11

Q. Now, we know where Dr.
12 Becker stands and I suggest to you that from your
13 evidence we know where you stand. Will you agree
14 with me, however, that within the profession itself
15 that view, that the periods of apnea along with the
16 four pathological indicia is not universally accepted
as being specific to SIDS?

17

A. I can't answer that. The
18 people who I would suggest - I have here a book.
19 There was the International Congress of SIDS that was
20 in Toronto in about 1976 and I had the good fortune
21 or whatever to chair that meeting and I have the
22 proceedings here of that book and all of the world's
23 experts and they were all younger than I was then I
think, so, they are probably still alive and I would

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suggest if you wrote to each and every one of them
and gave them the history of this baby and those
findings they would have to say, and I don't think
any of them would hedge, they would say - well, they
would hedge, they would say this baby almost
certainly had SIDS as far as anyone can go in
medicine of certainty.

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Q. All right. Now, are you
familiar Doctor with Dr. Derek De Sa, the Chief
of Pathology at Winnipeg Children's Hospital?

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A. I think I have shaken hands
with him and that is about it.

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Q. All right. Would it
surprise you to learn that he felt in making a
contribution to the report for the Centre for
Disease Control that Sudden Infant Death Syndrome,
No. 1, was a disease without specific pathology
and, No. 2, indicated in his report that for that
reason Jordan Hines was one of the cases where the
cause of death was not adequately explained.

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A. I'm sorry that I have not seen Dr. De Sa's report. I understood that the pathologist's report had gone to the Attorney-General Office, or to the Minister and had not been - we have been trying to get a copy for some time and I would like to see what he said first. If he said that, that's fine, but all that means is that either he has seen the literature of Dr. Naeye and doesn't agree with it, or he has not seen the literature that Dr. Naeye and Dr. Becker and others have presented.

MR. TOBIAS: Well, Mr. Commissioner, I am in your hands. Mr. Ortved has suggested I give you a reference. I have no difficulty in doing that, subject obviously to the caveat that this report has not been made an exhibit and is not part of the public record yet. For that reason in all of my cross-examination I have never quoted from it, especially since it was released to us under fairly specific pre-conditions that we observed. I certainly don't want to open up a can of worms and get into a scenario of cross-examination and re-examination on the report.

THE COMMISSIONER: I don't think that should be too much of a concern. I think if you want to read from the report something that was



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said, and ask him if he agrees with it, that is fine,
I don't want that report to become an exhibit yet.

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THE WITNESS: I am sorry, sir, I
was referring to the pathologist's report rather than
the pathologist's contribution to the report that
we have been given.

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THE COMMISSIONER: You have seen the
expurgated version of the Atlanta Report?

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THE WITNESS: I don't know if
Dr. De Sa's name was mentioned, I don't know.

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MR. LAMEK: If I understand the
problem it is this: that there is in addition to
the Atlanta Report that we have referred to, there
is a separate pathology report prepared for and
subsequently by the Atlanta people. That is not
part of the documentation that we have, although it
will be obtained from them and made available. There
are references to that separate report in the Atlanta
Report.

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THE WITNESS: Yes.

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MR. LAMEK: I think it is one of
those that Mr. Tobias is referring to and presumably
Dr. Bain has seen the expurgated version of the
report.

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THE COMMISSIONER: You haven't seen
this?

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THE WITNESS: No, that is correct.

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MR. TOBIAS: Mr. Commissioner, that is correct, the pathological report itself is a separate document which I have not seen nor do I believe any of the counsel have seen. What I was referring to was a reference to the findings of Dr. De Sa as they appear in that report.

THE COMMISSIONER: I see nothing wrong with that, Mr. Tobias. I don't want it to become an exhibit yet because of all the things we have done with respect to it. At the moment if you want to read from it, and put it to him, does he agree or disagree, and I think you have done that and I think he has answered you.

THE WITNESS: I have no concerns at all, Mr. Tobias, I would be glad to - my feeling about it is, that as I say those findings are findings of SIDS or missed-SIDS. I will be glad, Dr. De Sa is a fine and a very competent person, and people in medicine are always arguing with each other, I would be very pleased to debate that with him.

MR. TOBIAS: For the benefit of counsel and you, Mr. Commissioner, what I am referring to appears at page 10 of Appendix 1 to the CDC report; and I am quoting 11 lines up from the



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Q. Doctor, I am going to put this question to you and I am going to ask you two questions just so that we can keep the thing in perspective. The first question I am going to ask you is whether you are surprised at this opinion; and the second one I am going to ask you is whether or not you agree or disagree with it:

"At autopsy the heart was normal.

Pathologic changes in several tissues, liver, spleen, thymus, lungs and brain and persistence of brown fat were considered by the consulting pathologist to be consistent with a diagnosis of Sudden Infant Death Syndrome. However, he emphasized that this is a disease without specific autopsy characteristics, and therefore he considered this death one of the three not fully explained by autopsy findings."

Now, I will end there for the moment.

If counsel wish I will put the balance of the paragraph to you in a moment.

First of all, does that passage in any



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way surprise you?

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A. It surprises me very much, because if Dr. De Sa, and that is why I would like to see the full report; if Dr. De Sa is using extramedullary hematopoiesis, and all that means, those big words that doctors use, it is that blood cells are being made in other organs than in the bone marrow, because the patient has chronic hypoxia and is using every mechanism he can to make extra blood cells. Brown fat occurs in many things, including groundhogs, and that is not meant to be facetious, because that is where Dr. Bigelow did all his original work was in groundhogs and hibernation. But nevertheless, the main features that Dr. Naeye described were the pulmonary arterial thickening; and the main things that Dr. Becker added and others were the changes in the brain and brain stem. So if Dr. De Sa did not mention any of this I would agree with what he said. for brown fat and extramedullary hematopoiesis, and it surprises me very much he did not put the other things, and if he put the other things in I would certainly disagree with him. I cannot disagree with him on the two things he did put in, because there are many things that can cause those.

Q. And of course until we see the



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full report we don't know whether he directed his
mind to the ---

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A. Well, if he didn't it is there,
the findings are there, whether he put his mind to
it or not, I would debate it with him because that is
the current state of knowledge and the accepted view.

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Q. Are you familiar as well with
an article produced for us by Mr. Scott by Shannon
and Kelly, which is Exhibit 161, Mr. Commissioner.
This article appears ---

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A. I have read the article at some
time and I have it somewhere, I don't remember it
verbatim but you could quote from it if you wish.

Q. All right. All I am attempting
to do, is that there again there is a reference
under the heading "Pathology" that:

"SIDS is death without sufficient
pathology."

Now I put that to you only in this
context; can we or can we not agree that with
respect to these four findings that Dr. Becker
uncovered, it certainly is not universally accepted
throughout the profession that they are specific to
SIDS and indicative of the Sudden Infant Death
Syndrome, or for that matter missed-Sudden Infant



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Death Syndrome.

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A. Well, I think I have answered that in saying it is reported in 64 per cent. I am sure, to answer your question, that there will be people in the world who will not agree with it, there is never uniformity in the medical profession. I would think amongst the people who are interested in SIDS, because at the conference here in Toronto Dr. Naeye presented those facts for the first time before he had written about them and everybody was sufficiently pleased with it. I heard Dr. Naeye speak again two years ago in Winnipeg and he was still reiterating the fact that these are the findings, he had come down to finding them in only 64 per cent, so that is all I can say. There could be disagreement in the medical profession, but I think the weight of evidence is that patients who show those findings would appear to have had chronic hypoxia for at least two weeks.

Q. In fairness, Doctor, I'm going to put in a reference that Mr. Roland brings to my attention.

MR. ROLAND: My friend reads from the article he is quoting:

"SIDS is death without sufficient pathology."



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Then the whole next 10 lines or so of that paragraph
that follows really leads to the conclusion that
that first line is a throw away because it talks
about the pathology of SIDS.

MR. TOBIAS: Well, the article
will speak for itself, Mr. Commissioner. I have no
problem, in the interests of fairness in putting the
balance of the paragraph to the witness. I don't
think it takes us anywhere though, because the only
point I was labouring to bring out, and I think the
Doctor has agreed with me, is like any medical
proposition this proposition as well is the subject
of some debate and some controversy.

THE WITNESS: May I refer you to
page 1025 of the article to which you are referring.

MR. TOBIAS: Q. Yes. And Doctor,
I don't know whether it was Shannon or Kelly:

"Structure - Function Relations:

In five infants with near-SIDS who
later had SIDS, we found that
pulmonary vascular smooth muscle
extended abnormally into small
pulmonary arteries accompanying
alveoli. We have recently found the
same changes in two other infants.

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"Thus all seven infants recognized as
having near-SIDS in whom SIDS later
occurred had this marker of repeated
alveoli hypoxia seen in two-thirds of
the infants..."

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Yes.

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A. Well, whether that negates
what she later said, but they are saying that these
markers that we have referred to with the changes in
the pulmonary arterial, she is saying she has found
it too.

Q. All right, I accept that.

Have I correctly summarized your view that you are
agreeing with me that it is subject to a certain
debate going on?

A. Everything in medicine is,
Mr. Tobias.

Q. In your view, Doctor, in making
or coming to a diagnosis of missed-SIDS, how important
are observed periods of apnea during life?

A. Well, you know, if they were
not there then what are we talking about? You know,
something - in this particular mother and let's -
if we get back to specifics, my understanding was
that here is a baby that is in the proper age group



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and he is a male, and we poor males do most of our suffering earlier on and the women do it later on, but nearly everything in early life has a higher incidence in males. She finds the baby and it is enough to scare her, and I take it Mrs. Hines is a very good mother and a very competent mother. She is sufficiently frightened that she picked the baby up and shook it, and the baby I think had some coughing spells as well, that was the main thing and off-colour. That happened two or three more times, she spoke to her doctor who referred the baby to the North York Hospital, he was sufficiently concerned about that. At the North York Hospital the doctor - I don't know who saw the baby first, but Dr. Rosalind Curtis, a Pediatric Neurologist saw the baby because they were obviously worried about convulsions or such things. She couldn't find anything; she wondered about the heart and other things. She wondered because there was whooping cough at home whether the kiddy had some sort of thing related to that, so that the baby was given a vaccine or immuno-globulin pertussis. Dr. Shams was called and didn't get there until 9 o'clock at night. If you look in the lower left corner of Dr. Shams' report you will see, you know, it just wasn't a figment of somebody's



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imagination.

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Q. Doctor, you are suggesting, I believe you are referring to the medical chart, the medical record?

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A. Yes.

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Q. So that we can assist the Commissioner in following your evidence, perhaps we can bring that reference to his attention. It is Exhibit 103 and I believe the notes --

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A. It is hard to read, it is in the bottom left hand corner.

10

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Q. It appears on page 8; go ahead, Doctor.

12

13

A. It is hard to read on our copy at least. I think, what I have interpreted Dr. Shams to say:

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"During my observation the baby had a fever, severe spells of apnea, cyanosis, bradycardia followed by PAT..."

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I think what he is saying, . . . the heart at least speeding up. He was sufficiently concerned that he called an ambulance and sent the baby to the Sick Children's Hospital, not the next day, but that night at just about midnight. His diagnosis was Sick Sinus Syndrome, but his alternative diagnosis, everybody's

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always looking for something and winning an Oscar
for they year, that he thought it might have a tumour
of the heart.

5

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So I am saying to you, yes, this baby
did have periods of apnea.

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Q. Doctor, that was not my question.
With respect, my question was, how important is it
in your view that there are observed periods of
apnea during life?

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A. Well, if you don't observe some-
thing, then if it's death then it's SIDS if you
find the other things, and as I say babies too
if you watch, I don't know if you have any children
of your own, but if you look at any children in the
first month or two of life they scare you, because
they don't breathe evenly and they are, there are
frequent times when there are two, three, four, five
seconds when they stop breathing, so we put a
different figure on that for them.

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So when you ask me how important it is
I would say, I can't answer that, it is important if
you have it, but if you don't have it you can't say
it wasn't there.

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Q. Do you agree with Dr. Becker
when he says that observed periods of apnea during



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3 life are "absolutely pre-requisite" to a diagnosis
of missed-SIDS.

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A. To missed-SIDS?

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Q. Yes.

6

7 A. Well that is hardly a fair
question because if you don't observe something and
they get over it, what was it that made you think
it might have had something.

8

9 Q. Doctor, I put it to you again --
10 A. Well.

11

12 Q. I just want to know whether
you would put as much of a premium on it as Dr. Becker
13 did, if you don't, just tell me and I will go on.

14

15 A. Okay, let's put it another
way. I will just try to, you know, if mother picks
the baby up and it is not breathing and she shakes it
16 and it comes back to life.

17

Q. Yes.

18

19 A. That is simple enough. Now
when did it - she goes in and she finds it blue and
she says, well it was breathing and she picked it
20 up and shook it and it got better. Now, there is
21 your grey area, or blue area, grey area of was there
22 an observed period of apnea.

23

24 Q. Doctor, I intend to come to

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3 that in a moment. Before I could come to that I
4 have to ask you to answer my question. If you had
5 told me, oh no, I don't think they are important
6 at all then there is no point in discussing it any
further.

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that in a moment. Before I could come to that I
have to ask you to answer my question. If you had
told me, oh no, I don't think they are important
at all then there is no point in discussing it any
further.

A. They are important if they are
there.

Q. They are important if they are
there?

A. Yes.

Q. Now, Dr. Phillips told me the
other day when I was cross-examining him that one
of the factors that go into the diagnosis is not
only whether the apneic periods are there but the
severity of those periods. Would you agree with that?

A. That is what I was trying to
say a moment ago is when does apnea become apnea.

Q. Precisely.

A. People put time factors on them
and those are pretty hard for parents to observe.

Q. Precisely and I agree with you.
With respect to some new borns you would agree with
me that brief periods of apnea are observed as
nothing abnormal at all?



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4 DPra

Q. All right, fine.
With that, doctor, I wonder if you have also read an article that I put before the Commission, which was entered as Exhibit 180. This is the article that I am referring to from the Saturday, April 2, 1983 edition of the British Medical Journal, which was a study by Dr. D. D. Southall, the cardiologist at the Cardiothoracic Institute at Brampton Hospital.

Have you had an opportunity to see that article?

A. I know that article, yes.

Q. Fine. You would agree with me - I don't want to get into a great deal of debate this morning about what the article's conclusions were, but one of the things that they were trying to do was measure apneic periods. Is that correct?

A. They were monitoring, I believe, heart and lungs.

Q. As a matter of fact, they say that one of the things that they were looking for was, I quote, "prolonged periods of apnea".

A. Yes.

Q. And on page 3 of that

24
25



Bain
cr.ex. (Tobias)

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E2

2 article, Table 3, they have even, in the 29 cases
3 that they have identified as SIDS deaths, they have
4 indicated, in the second column from the right, the
5 precise time periods of the periods of apnea.

6

Do you agree with that?

7

A. I'm sorry, I missed that

8

question.

9

O. All I am saying, doctor,
in one of the columns on that table, they have
actually made specific reference to the precise
time periods of the apneic episodes.

10

A. Surely.

11

O. So, they obviously put

12

some premium on the length of the apnea --

13

A. They have to. When you are
doing a scientific thing, you have to put a figure
on it.

14

O. Not only that, but in light
of what you just told us - that brief periods of
apnea are not that uncommon - obviously, their
interest was in investigating prolonged periods of
apnea. Do you agree with that?

15

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A. I think, if you read the
article - and I am sure you have - what they did was
take about 5,000 or 6,000 or 7,000 or 8,000 babies



Bain
cr.ex. (Tobias)

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E3 2 and monitored them for six or eight weeks, or whatever
3 it was, just to see if, by chance, if they took that
4 very large number and any of them died, whether there
5 would be in the monitor some clues that would suggest
6 to you that there would be a method in the future of
7 monitoring -- suspecting --

Q. Exactly.

A. They found, in their
9 particular cases, that, no, there were not, and that
10 does not bother me. Neither were there any changes -
11 there was one patient, as I recall it, that had some
12 changes in cardiac rhythm, but that could have been
13 by chance, as they pointed out. Insofar as apnea,
14 they were not able to confirm on that particular
15 number. That in no way negates what I have said.
16 I said, if the periods are there, if the apneic
17 periods are there, it is very helpful. If they are
18 not there, the question is, were they there and
nobody noticed them or were they not there.

Q. Doctor, I am not necessarily
19 trying to indicate that this negates what you have
20 said. What I am indicating to you is this: I think
21 we can agree, because it is right there in black and
22 white --

A. That doesn't say it is right

24

25



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E4 2

if it is in black and white, I might say.

3

4

Q. The conclusion of the article was that, in these particular 29 sample cases, there were no periods of observed prolonged apnea.

5

A. Correct.

6

7

8

9

Q. But they did have some apneic periods. As a matter of fact, they seem to range up to as long as 13.2 seconds.

10

A. That is pretty long, if you ever watch one.

11

12

Q. But in the opinion of these authors, they did not call that a prolonged period.

13

14

15

A. I know, but you watch a baby who doesn't breathe for 13 seconds, and you have counted, and you would be pretty concerned.

16

17

18

19

But, nevertheless, I agree with what these people are saying; that, in the patients they have monitored, they were not able to find the markers they were looking for, but they are continuing their studies.

20

21

Q. Doctor, let us come to the medical record of Jordan Hines --

22

A. Yes.

23

Q. -- against this background.

24

25



Bain
cr.ex. (Tobias)

1 You and I have no difficulty, we
2 agree that periods of observed apnea are certainly
3 relevant and important?

4 A. Apnea, especially, Mr.
5 Tobias, when associated with a baby turning blue and
6 mottled, yes.

7 Q. Fine. Now, we know that
8 what we are looking for here are not just these
9 brief periods of apnea that we see in all infants
10 but some kind of prolonged apnea. I won't put a
11 definition on how many seconds. I take it that that
12 is a matter of opinion.

13 A. I don't know if it was that
14 article, there is one other thing that they pointed
15 out. Maybe it was that article. I wonder if I might
16 just go on. They wondered if the prolonged apneic
17 spells that we sometimes see were not the result of
18 something that went on beforehand; that is, it was
19 the effect rather than the cause. I think that is
20 one of the things -- I think it was that article. I
21 have not looked at it for a while.

22 Q. I believe it was that
23 article.

24 A. So, that is fine, you
25 know, whether it is cause and effect. That again
comes back to the point that these associations are



Bain
cr.ex. (Tobias)

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E6 2 not clear by a longshot yet; they won't be for a
3 while. There are different people that have
4 different views. The presence of apneic spells
5 certainly makes you worry.

6 Q. Now, we have a reference
7 in the chart to the episode that took place at home
8 on March 5. Can we agree, doctor, so that I can
9 continue on in my review of the chart, that, other
10 than the taking down of the history when the child
11 was admitted, no one at The Hospital for Sick
12 Children actually interviewed the mother regarding
13 that episode?

14 A. Oh, I think that is
15 completely wrong. There is a history by Dr.
16 Mangera, which is a very good history, and Rashida
17 Mangera is a very fine resident and I would
18 think is fully qualified now and a very fine doctor.

19 The history, as it came from North
20 York, what I saw - I have never seen their notes at
21 North York, but the things that came from North
22 York stated that the baby had choking spells and
23 apnea, or whatever, at home. It did not make any --
24 the notes we received from them did not contain any-
25 thing about the mother being concerned - she was
concerned, obviously, because she called her doctor



Bain
cr.ex. (Tobias)

1
E7 2 and took the baby to the hospital - about the mother
3 shaking the baby.

4 Q. And, doctor, how do you
5 know that she called the doctor?

6 A. I don't know that. She
7 may well have taken the baby, and it does not matter
8 to me. She was sufficiently concerned that she
9 sought medical help.

10 Now, the next thing, Dr. Mangera,
11 in taking the history, clearly states what the
12 mother said, and if you look at the ambulance note
13 the mother came with the baby to the hospital; not
14 the father - it was not just the notes from North York
15 but the mother. So, if it was not in the notes
16 from North York, then the history as obtained, and
17 this is a very good history by Dr. Rashida
18 Mangera, and I take exception to what you said about
19 the history the other day, because that casts
20 aspersions on Dr. Mangera, and she speaks of these
21 spells, and she can only have gotten that information
22 from the mother.

23 Q. Doctor, I thought you
24 agreed with me the other day - and we are referring
25 now specifically to page 61 of the medical record
of Jordan Hines. I take it what you have been



Bain
cr.ex. (Tobias)

1
E8 2 referring to as taken down by Dr. Mangera was the
3 history of the child on admission?

4 A. Correct.

5 Q. Did you not agree with
6 me the other day that this was based on conversation
7 with the mother and Dr. Mangera's reading of the
notes from North York General?

8 A. Yes, and I still agree
9 with you because she wrote that.

10 Q. Have you spoken to Dr.
11 Mangera about this note?

12 A. I have not seen her for a
13 long time.

14 Q. My question specifically
15 was, have you spoken to her specifically about this
note?

16 A. I have not spoken to Dr.
17 Mangera about this note.

18 Q. Then you would have
19 absolutely no idea how much of this note was based
20 on her personal conversation with Mrs. Hines and how
21 much was based on the notes from North York General,
would you?

22 A. Except the notes from North
23 York General are there, and they make no reference to
24



E9

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2 the picking up and shaking, and the only extraneous
3 factor was mother and Dr. Mangera, at the top of
4 her history, said where she got the information,
5 so I would think, by exclusion, it had to be from
6 the mother.

6

Q. All right.

7

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Do you agree with me, though, that
other than that particular episode, you would have
no idea how much of that note is based upon the
mother's oral history to Dr. Mangera and how much
from the notes at North York General?

A. The notes from North
York General are there and Dr. Mangera may or may
not have read them before and then would take her
history just as anyone else does with a patient.

In any event, when a patient is
sent to you or sent to another hospital, obviously
they have not made the diagnosis or they think it
needs special treatment or investigation at another
hospital and, therefore, you repeat things.

We often, as many of you probably
know, when you go to another doctor, he will probably
repeat a whole set of X-rays, which gets your back
up a bit. But, because you want to do it in your own
setup, and our people repeat the history and, in fact,

25



Bain
cr.ex. (Tobias)

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E10

2 the resident who admits the patient may take a
3 history; the Fellow may come along and take a
4 history; the doctor may well take a history over
5 the telephone and have notes in his own office.

6 So, all I am saying is, Dr. Manger's
7 note was a combination of every bit of evidence
she could obtain from anywhere.

8 Q. Fair enough.

9 Other than that note, did anyone
10 at The Hospital for Sick Children speak to the
11 mother?

12 A. I have no idea.

13 Q. Did you speak to the
mother?

14 A. You must remember that I
15 saw the chart a year or so after Jordan had died.
16 It is not ethical for me to be in contact with the
17 mother.

18 Q. The short answer is that
19 you did not speak to the mother; do you agree with
that?

20 A. I think that is a fair
21 statement, Mr. Tobias.

22 THE COMMISSIONER: Could I
23 interrupt just for a moment.

24
25



Bain
cr.ex. (Tobias)

1
2 Ell Where is the reference to the
3 doctor who took the history?

4 THE WITNESS: She just signed it.

5 THE COMMISSIONER: Where did she
6 sign it?

7 THE WITNESS: You go on three or four
8 pages. I think I may have a history here.

9 THE COMMISSIONER: I think you
10 put the copy there but I could not find anything.

11 THE WITNESS: "Inform parents--
12 notes from North York". Then she goes on and gives
13 more of the history. This is still part of the
14 history and then this is the physical examination
15 and this is the rest of it, and that is her signature.

16 THE COMMISSIONER: Just at the
17 bottom of page 65?

18 THE WITNESS: Yes.

19 THE COMMISSIONER: Thank you.

20 MR. TOBIAS: I'm sorry, Mr.
21 Commissioner, could you help me? The reference was
22 to the bottom of page 65?

23 THE COMMISSIONER: 65.

24 THE WITNESS: I think that is
25 Dr. Rashida Mangera. I remember the thing and
then I went back through the resident's notes over the



1
E12 2 weekend just to see if -- I could not quite remember
3 whether it was Mangerà or whatever, because she has
4 left us.

5 MR. TOBIAS: Q. Doctor, my
6 next question is this: On the history note taken
7 by Dr. Mangerà, the only reference with respect to
8 the episode at home regarding breathing would appear
9 to be a reference, "shallow breathing"; is that
correct?

10 A. Let me read what she said.

11 I went back, I must confess, on the
12 weekend and did it again. In any case, I will just
13 see...

14 I'm sorry, what was your --

15 Q. What I am trying to do,
16 I am assuming you are correct. For the sake of this
17 question, let us assume that the information regard-
18 ing the episode at home was taken directly from the
19 mother. I see a reference on page 65, "Well until
20 one day prior to admission. Found by mom in bed.
21 Grey-blue in colour, shallow breathing."

22 That is one reference.

23 THE COMMISSIONER: That is what page?

24 MR. TOBIAS: Page 61.

25 "Picked up and shaken and child



1
E13

2 choked, cried and pinked up
3 immediately. Occurred plus/minus
4 half hour after feed."

5 The next line, the first word

6 is "have"?

7 A. "Had", I think she changed
it to. "Had a few more episodes".

8 Q. "Had a few more episodes,
9 developed shallow respiration,
10 then changed colour, grey-blue,
11 pinked up immediately with
12 shaking. No feeding difficulties.
13 Not very active. Not feeding well
14 for few days. No fever. No
15 vomiting. Diarrhea."

16 Other than that, can you tell me
17 what other references there were from the mother
to periods of apnea?

18 A. No. That would be
19 sufficient to me.

20 Q. There is certainly no
21 indication there that the mother observed periods
22 where the child stopped breathing?

23 A. I don't know that. There
24 is no indication there but there was shallow breathing

25



Bain
cr.ex. (Tobias)

E14 1 and the baby turned blue.

3 Q. That was my question.

4 There was no indication - she may have or she may
5 not have. The only way we will ever know that is
6 if we call her as a witness and ask her.

7 A. And she may remember and
8 she may not, because when those things happen, they
are pretty stressful.

9 Q. Going on, we also have,
10 at page 6 to 8 of the chart, the notes from the
11 North York General.

12 A. I should just add to that,
13 if you are going to have lack of breathing to the
14 point of turning blue, it has either got to be
15 very shallow or not there. So, again, it comes
down to degree. Apnea is just a further --

16 Q. I agree.

17 A. Good. Thank you.

18 Q. We then have references,
19 at pages 6 to, I believe, 8 of the chart from North
20 York General Hospital - we have consultant's reports.

21 Now, specifically with respect to
22 page 6, I note references at the very bottom line to
23 apnea. I'm terribly sorry, I am struggling a little
bit because I have a great deal of difficulty making

24

25



Bain
cr.ex. (Tobias)

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E15 2 at my copy.

3

A. The Hospital copy is worse
4 than this, I should say.

5

I am only referring for the moment to page 6 - we
6
7
8
9
10
don't know whether that reference to apnea was an
observed period of apnea or some conclusion drawn
by something that that person had been told by the
mother at North York General?

11

A. I think that is true from
the manner in which it is written.

12

Q. From the manner in which
that is written?

13

A. Yes. I don't have - and
perhaps you do have -- what I have never seen, Mr.
Tobias, is the history as taken at North York.

14

Q. I have not seen that as
well, doctor.

15

A. So, it may be that someone
at North York took the history directly from the
mother and this person, whose name I can't decipher -
I know the other people at North York but I am unable
to decipher this one - was simply quoting the note
because that is what happened with Dr. Curtis. She

16

17



Bain
cr.ex. (Tobias)

E16

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made special reference to it; that her history was
from the notes, and Dr. Shams' the same. So, it
is the step before this . that might be valuable to
know.

5

Q. I quite agree, doctor.

6

Now, if we go on to page 7, we
have several references on page 7.

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BmB.jc

F 1

2 Q. On the top of the page under
3 Reason we've got bradycardia and apnea. Again, we
4 don't know whether that is an observed period of
5 apnea or something that they surmised.

6 A. Yes.

7 Q. And then there is a reference
8 three lines down, and perhaps you can help me.

9 A. I'm sorry, I should say that
10 in looking at the beginning of that one.

11 Q. Yes.

12 A. That I guess I missed before
13 he says, or Dr. Ross Curtis says:

14 "Two week old infant admitted with
15 a history of being well until 48
16 hours ago when he developed choking,
17 bradycardia and apnea."

18 Q. Yes.

19 A. So that she is quoting something.

20 Q. I agree, I agree, but you will
21 agree that that particular reference isn't a reference
22 that that doctor observed the period of apnea?

23 A. No, that's true.

24 Q. Okay, fine. And then they go
25 on. Perhaps you can assist me, you seem to be better
at deciphering this writing.



F.2

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A. Yes, it is like a pharmacist's.

2

Q. What is the balance of that
line, Doctor?

3

A. I am sorry, which one are we on?

4

Q. When he developed choking,
bradycardia?

5

A. Oh.

6

" ... choking, bradycardia, apnea.
Sibs. at home have cough."

7

It looks like "reading notes", something "notes":

8

" ... apnea followed by bradycardia
occasional harsh choking cough. No
seizure activity seen."

9

10

Dr. Curtis is a neurologist, so she is looking for
seizures.

11

12

13

Q. All right, thank you. Now,
further down the page, Doctor, the last full
paragraph, the other reference to apnea is:

14

15

"Impression: apnea and bradycardia -
possibilities include .. "

16

17

and then a number of possible diagnoses are listed.

18

19

So, again on that page we don't know whether these
are observed periods of apnea or something they
have been told?

20

21

A. I think that is correct.

22

23

24

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F.3

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Q. All right. But what we do know
and what you pointed out before is that on page 8 of
the report in Dr. Shams' note there is a reference
at the bottom of the page that:

5

6

"During observation baby had a few
severe spells of apnea ... "

7

A. Yes, and cyanosis.

8

Q. All right. Now, the first thing
I would like to ask you is, before you indicated - I
am not sure you did this intentionally at all, I
.don't attribute any motive to you at all, Doctor, but
your words were:

12

"During my observations the baby
had a few severe spells of apnea."

13

Now, obviously I think we can agree the word "my"
does not appear in the actual text.

16

A. Oh, it says during observation.

17

Q. All right.

18

A. The baby, and then it has a
signature. All right, the "my" is not there, I agree.

19

Q. It is somewhat argumentative
whether it was actually Dr. Shams' observations
or something he had been told by a nurse or resident.
We don't really know until we examine him and ask him,
do we?

24

25



F.4

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2 A. Yes, I suppose that is true.

3

4 Q. And the other thing is that we
5 know or we can at least be fairly sure that from these
6 charts it would appear that Jordan Hines was only at
7 North York General for about seven hours. I believe
8 there is a reference to time of admission as 1530 hours
9 which I would say is 3:30 in the afternoon and I am
10 assuming that because he arrived at Sick Kids just
11 before 11 that he probably left North York General
12 at about 10:30. So, we know he is at North York
13 General at 10:30.

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A. I'm confused, Mr. Tobias. I

think, and although I have a little question, I think
he was there a day. I think he came in one afternoon
and then went to Sick Kids the next night because you
will notice Dr. Curtis' note said that the baby had
had these 48 hours before. So, I think we need to
check that date out. I have been assuming that the
baby was there for a day.

Q. Well, do we not agree, Doctor,

if you look at page 6, the very first note says
March 5th, '81, two week old boy admitted 1533 hours,
March 4th, '81.

A. Well, whatever it is I will

accept whatever anybody can decipher. I had difficulties
with it.



F.5

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Q. Well, can we agree that it would appear from that note he was admitted to the North York General at 3:30 in the afternoon on March 4th?

A. Well, if it came in on the 4th it came to Sick Children's on midnight the 5th.

Q. No, it came to Sick Children's on the 5th.

A. No, it did not. There was a note there that was a little confusing. It was admitted down in the Emergency Department at 2350 or something like that and I think someone on the floor - it was just after midnight it is 0040 and that was the 6th. But I think they've got confused with their fifths and sixes. So, I am certain that it was in North York Hospital for a day.

MR. ROLAND: If you look at page 33 it was admitted at 2430 hours on the 5th, which really is the 6th.

THE WITNESS: Yes, that's right. It has 0030 but it arrived in the Emergency to give everybody their fair look at this that had arrived in Emergency at 23-something.

MR. TOBIAS: Well, Mr. Commissioner, if I can be of some assistance.

THE COMMISSIONER: Yes.



F.6

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MR. TOBIAS: Because this is extremely confusing. Mr. Roland is quite right, the reference is to 2430. It is my information that that reference to 2430 is in fact on March 4th and the reason why I say that is because we have nursing notes for Hines on the 5th, 6th and 7th.

THE COMMISSIONER: Well, it would be bound to be after midnight I would take it, would it not?

MR. TOBIAS: Yes, I would suggest --

THE COMMISSIONER: So, it is 24 hours after the midnight starting on March 4th is what you mean?

MR. TOBIAS: Yes. Well, what I am saying is if he was admitted at 12:30 a.m. on the 6th they could hardly have lengthy observations in the progress notes about his condition on the 5th. Cannon, Registered Nursing Assistant, at page 66 has a note 5/3/81 child admitted 2430:

" ... large baby - pink colour - apnea - brady and tachy. Hard to awaken when respiration as low as 20."

If he had been admitted on the 6th, I doubt very much that she could have made all of those observations. She has got his heart rate, she has got



F. 7

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2 the variance in the heart rate from 80 to 144, from
3 60 to 200, other signs normal, eyes crusty and weeping,
4 no swab taken yet, chest fairly clear, has bad cough.
5 And then there is a separate note, an altogether
6 separate note for March 6th by Nursing Assistant Lyon.

7 MR. ROLAND: Mr. Commissioner, I
8 thought I pointed out to my friend, my understanding,
9 if you look at the chart as a whole and all, the
10 date of 5/3/81 on page 33 should really read 6/3/81
11 and that is shown by the fact that the baby was
12 admitted really 30 minutes after the 5th, that is,
13 30 minutes into the 6th. If my friend looks at the
rest of the chart ---

14 MR. TOBIAS: How do you know that it
15 wasn't 30 minutes after the 5th, Mr. Roland?

16 MR. ROLAND: If my friend looks at the
17 rest of the chart he will see that all of the other
18 records confirm that, including the death report and
19 showing admission dates and everything else on the
chart confirms that the baby was admitted on the 6th.
20 There are no records of what happened during - if you
21 follow my friend's reasoning that it was the 5th.
22 There are no records of what happened the rest of
23 that day on the 5th, you would have a whole 24-hour
24 period and the chart simply doesn't disclose that

25



F.8

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2 there were events that occurred on the 5th, that 24-
3 hour period.

4 MR. TOBIAS: Well, that is because my
5 information is, Mr. Commissioner, on the 5th is when
6 the child was at North York General and my information
7 is that the reference on page 6 to admitted 1533 hours
8 March 4th, '81 is in fact an incorrect reference but
9 the only way to get that again is to call my client
10 who will give evidence, and I put this to you subject
11 to later proof, that the child was taken to North
12 York General Hospital on the afternoon of March 5th.

13 MR. ROLAND: Well, if you look for
14 instance at page 8, Mr. Commissioner, on the North
15 York Hospital itself, it gives us a date of March 5th
16 at 9:30 a.m.

17 THE COMMISSIONER: Page 8?

18 THE WITNESS: I'm sorry, I think we
19 can solve it very quickly. If you read that doctor
20 who I cannot decipher, his note, or the first one from
21 North York, the first consultation written March 5th,
22 '81, two week old baby boy admitted at 1533 hours on
23 March 4th.

24 MR. TOBIAS: No, no, I recognize that,
25 Doctor, and thank you for your help. What I'm
suggesting to you, Mr. Commissioner, is that itself



F.9

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is a mistaken reference and the only way we are going
to get at it is when we call Mrs. Hines.

4

5

THE COMMISSIONER: Well, that doesn't
necessarily solve our problem either, you know.

6

7

MR. TOBIAS: No.

8

9

THE COMMISSIONER: I think it surely
is not difficult by looking at all of these records.
Mr. Olah, you have the solution?

10

11

MR. OLAH: Mr. Commissioner, if you
turn to page 58 at the top of the page.

12

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THE COMMISSIONER: Page 58?

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MR. OLAH: Page 58, top of the page,
the date and time of admission at Emergency is noted
thereon, which is March 5th at 2316 or '15 and it
appears that the baby was then transferred to the
floor some time later.

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MR. TOBIAS: Yes, thank you, Mr. Olah,
that is somewhat helpful.
THE WITNESS: It says actually a
little further, Mr. Olah, thank you, discharged from
Emergency at 0045, which is the time then that the
admission history will pick it up.

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MR. TOBIAS: Q. I'm sorry, Doctor,
could you help me with that reference, could you
direct me to the page?



.10

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A. Oh, I'm sorry, it was the
Emergency at Sick Children's Hospital.

4

Q. Right.

5

6

A. And was seen in Emergency at
2316 on the 5th and then left Emergency at 0045, which
is presumably then the 6th.

7

Q. Yes.

8

A. And then went to the ward.

9

Q. Well, I'm not sure that anything
turns on it, Mr. Commissioner. My understanding was
that the child was at North York General during the
afternoon of the 5th and I am somewhat troubled by
the reference in the note from North York General to
the 4th. Perhaps I can resolve the difficulty merely
by moving on.

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Can we agree on this one thing,

Doctor. We have spent a lot of time here discussing
a point that nothing turns on it, Mr. Roland, but
keeping our flawless record intact of being wasters
of time.

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All right, moving on, Doctor, in the
chart. If we can look at page 33, which I must
confess as I study the chart was the next apparent
reference to apneas. There is an observation there
about half way down the page under date March 5th -



F.11

1

2 I'm sorry, in the second line, March 5th, '81 by
3 Cannon, Registered Nursing Assistant, apnea, bradycardia.
4 Now, I put to you two things that struck me about that
5 reference. There is no indication there of how long
6 the apnea was.

7

A. Right.

8

Q. There is also no indication
from the way she has phrased it as to whether or not
again that is something that came from the history
or something she had read on the chart or whether that
was an observation of apnea. Do we agree with that?

12

A. It should be her observations
because that is her job.

14

Q. All right, fine.

15

A. But I cannot say that for sure.

16

Q. But we cannot be sure, all

17

right, fine, I think that is a fair answer.

18

Now, the next reference then is on
March 6th, '81 where we have the nursing note of
Registered Nursing Assistant Lyon and the only
reference to apnea that I can make out is on page 36,
6/3/81 still having apnea with bradycardia. Now,
again ---

22

A. I'm not sure, I have a feeling
that is a doctor's note that is unsigned because I

23

24

25



F.12

1

2 think the writing changes about a paragraph above
3 Miss Lyon's note. You will see there is quite a
4 significant change in the fourth line on page 34 but
5 it is not signed or maybe it is signed and doesn't
6 show through on the Xerox copy. It looks more like
7 a doctor's note with him talking about blood gases
8 and all that, yes.

9

Q. In fact, I agree with you there
9 is reference there to blood gases. So, we can assume
10 that some physician wrote that?

11

A. Yes.

12

Q. Now, again there is no reference
13 there to time, to time of the apneas?

14

A. The duration of the apnea, is
14 that what you're saying?

15

Q. Yes. The other thing that
16 strikes me about that note is this. Assuming that it
17 is a doctor's note we don't know whether his
18 observation about still having apneas is based upon
19 his own observation or something that a nurse or
20 nursing assistant has told him?

21

A. Well, when the patient came in,
21 Mr. Tobias, Dr. Mangera ordered monitoring of both
22 heart and respiration.

23

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Q. That's true.



F.13

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A. I would assume that the doctor coming around would either have the apnea tracing or the report of someone who had the apnea tracing seeing that the baby is still having apnea. So, he incorporated that in his note. He might have to stand there a long time and he couldn't do that to verify it himself.

Q. All right. With the apnea monitor on its tracings indicate periods of stopped breathing without the alarm going off?

A. It would depend when they would set it, for how long, for what period they would set it at, yes.

Q. All right.

A. And they are not infallible but usually they are and we hope they are.

Q. But what considerations, Doctor, go into that setting?

A. I guess it is the current state of the knowledge of what constitutes apnea beyond the newborn period, you know, above and beyond what normal babies do. I can't answer that because I'm not doing those sorts of things. I would guess they would set it at 10 seconds or 15 seconds.

Q. All right. That is an estimate,



F.14

1

I guess, of yours?

3

A. That's right.

4

Q. But let's deal with it this way
if we can because I suggest to you that it is not
really that difficult or technical a question. Do
you agree with me that you put a baby on anapnea
monitor sort of as a fail-safe. You want to be told
if he stops breathing?

9

A. That's true, yes.

10

Q. So, where you choose to set it
is a direct function of what the person setting it
or the doctor treating the patient considers significant
enough in terms of a period of stopped breathing that
he has got to be told that that has happened?

14

A. I believe I said that, yes.

15

Q. And obviously if the baby
stopped breathing for 10 minutes we would be pretty
darn concerned about the thing?

18

A. Yes.

19

Q. If he stopped breathing for one
second we wouldn't be so concerned?

21

A. Yes.

22

Q. Now, one of the questions I
have for you is, don't you think it is somewhat
significant since it was the treating doctors who

24

25



F.15

1

2 presumably set the length of time wherein the monitor
3 should go off, is it at all significant that at no
4 point up until the terminal events here, the apnea
5 monitor went off?

6

A. Well, first of all, I don't know
that it did.

7

Q. Well, is there any reference in
the chart that it did?

8

A. No, but there are none that it
did not either and what they have said is that the
patient has had some apnea. So, I can't comment on
that any further than I have, so, I will say no more.

9

Q. All right. Getting back,
10 Doctor, to page 36 when we see still having apneas,
11 you raise the question of the apnea monitor and the
12 examining of the tracings. Possibly he did examine
13 the tracings and see periods of apnea but what I am
14 saying is, on the basis of the chart alone, and that's
15 all you had to work with in making your report, we
16 don't know whether that doctor actually observed the
17 periods or whether it is secondhand information;
18 agreed?

19

20

21

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A. Certainly. I agreed about three
or four questions ago that that was so, yes.

Q. And one thing that is clear is
there is no reference there to time duration?

A. Correct.



G
DM/cr

1

2 Q. Now moving on we have

3

the nursing note of Registered Nursing Assistant
4 Lyon, on March 6, 1981; and the nursing note of
5 Janet Brownless, Registered Nursing Assistant on
6 March 7, 1981. Are there any references there that
7 you confined to periods of apnea?

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A. I am not sure, but it

really doesn't matter to me, Mr. Tobias, whether
there are, this baby had periods of apnea probably
at home; had periods of apnea at North York; had
periods of apnea documented at the Hospital for
Sick Children. So, you know, the question is not
how many and how severe, but was the baby having
apnea. From all I could read in that the baby
was having apnea spells.

Q. Doctor, the only thing I

am concerned about, and with respect, you know, I
accept the fact that you are not at all concerned
about whether he had apnea spells noted by these
nurses on the 6th and 7th. Please humour me, I am
very concerned about that. As I read the chart ---

A. Don't misunderstand me.

As I say the fact is the baby was having apneic spells,
that is documented, it does not have to be documented
and they do not have to be seen by everyone.



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Q. I agree ---

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A. On every shift, because that
is the very nature of SIDS.

5

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Q. Doctor, I agree, but with
respect I am not here to argue the conclusions with
you, I am only here to ask you some questions, and
we will both be done a lot sooner if we keep our
minds just on the questions and the answers.

9

10

A. Thank you, I will try to do
that.

11

12

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14

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Q. What I put to the Commissioner
in argument is something that has to be between
me and the Commissioner. Now obviously the answer
to that question is, there are no obvious references
on page 34, the nursing notes of Lyon and Brownless
to apnea?

16

17

18

A. As I say I could go through
the chart again and take another hour or two and
document ---

19

20

Q. Perhaps at lunch time
you might just do that.

21

A. If that is necessary.

22

Q. Perhaps at the lunch hour

23

you might do that, Doctor.

24

Now moving on, I think the next

25



1

2 reference that I have is on March the 8th, 1981,
3 and I'll refer you to page 35, we have the note of
4 Meredith Froese.

5

A. I'm sorry, what page were

6

you on?

7

Q. I am sorry, Doctor. I
apologize; page 35, we have the note of Registered
Nursing Assistant Froese at 4:10 on
the 8.3.81:

10

"I (Meredith) was feeding the baby
in Room 431."...

11

A. I am sorry, what was that second word, I have
trouble reading that one:

13

"I ..."?

14

It says:

15

"I (Meredith) was feeding the baby in
Room 431. Monitor on Jordan went off
and then stopped; I went to get up
and check him; at that moment the
apnea monitor went off."

16

17

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Now, we don't know what her first
reference to a monitor is.

21

A. It must have been the
cardiac, I guess.

23

Q. I think that is a fair

24

25



1

2 assumption. The point is that it would appear that
3 the apnea monitor went off at the time that this
4 baby went into terminal events?

5 A. That seems so, yes.

6 Q. Fine. The only other
7 reference that I could find, I got the long night
8 nursing note of Susan Reaper who is a registered
9 nurse on 8.3.81. Now, it appears that she was
10 caring for this baby on the evening shift of the
11 7th and during the long night shift of the 8th.

12 Would you agree with me that again
13 there does not appear to be any reference there
14 to observed periods of apnea during that time?

15 A. There is no reference,
16 correct.

17 Q. Fine. The other reference
18 that I have is a note made during the arrest, or
19 I shouldn't say during the arrest, after the arrest
20 by Dr. Costigan. His arrest note does not only
21 refer to a period of apnea, but he refers to a
22 length of time, he says:

23 "Child went into apneic spell 15 to
24 20 seconds long."

25 A. I'm sorry, I don't see that,
I kind of remember him saying it, but where is that



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2 on his notes?

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MR. TOBIAS: If you will just give me a minute, Mr. Commissioner. The problem-I have two copies of the arrest notes in my chart, but on the first copy I have got, which starts at page 36, I don't have page 2 of the arrest note.

THE COMMISSIONER: This may be a good time to rise, would it?

MR. TOBIAS: Yes, Mr. Commissioner.

THE COMMISSIONER: Yes, all right,

we will take 20 minutes.

---Short recess.

---On resuming.

THE COMMISSIONER: Yes, Mr. Tobias.

MR. TOBIAS: Q. Doctor, over the break I had the opportunity to read the long arrest note of Dr. Costigan, and in fact there doesn't appear to be a reference in that specific note regarding an apneic period, but I have found at page 41 of the medical record in the death report of Dr. Schaffer under the paragraph: "Hospital Course", about half-way through that paragraph.

THE COMMISSIONER: What page is this, Mr. Tobias?

MR. TOBIAS: Page 41.



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Q. "During observation, the child did tend to have brief periods of apnea..."

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This again, Mr. Commissioner, is starting on the fourth line of the paragraph under "Hospital Course"

5

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"During observation, the child did tend to have brief periods of apnea which were followed by sinus bradycardia. While still under observation in the hospital, the child had an apneic episode, lasting 15 to 20 seconds on the 8th of March, which was then followed by a period of bradycardia. Attempts to return the heart rate back to normal was unsuccessful and then the child suffered right ventricular tachycardia, lost consciousness and was unable to be resuscitated."

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Now, Dr. Schaffer was not at the arrest, but we know that the arrest was on March 8th, and we know from the note of Registered Nurse Reaper that prior to the arrest there appeared to be no observed periods of apnea.

So what I am putting to you, Doctor,



1

2 is that my reading of that, and I would ask you
3 whether or not you think it is a fair reading and
4 whether or not you agree, is that the only timed
5 period of apnea that we have a specific notation
6 of would appear to come at or near the time of
7 arrest.

7

8 A. I believe that is so,
9 I remember reading that somewhere else too. I
10 think if you will go on you will find there are
11 nurses' notes and things out of order. So, to the
12 best of my knowledge that is the only documented
13 evidence of a timed thing. Whether there were things
14 on the apnea monitor strips that were thrown away,
15 I don't know.

14

15 Q. Now, we do know that Hines
16 was on an apnea monitor?

16

17 A. That is correct.

17

18 Q. You agree?

18

19 A. Yes.

19

20 Q. We have also agreed, and
21 perhaps I should ask the question; who would it be
22 that determined what the setting on the apnea monitor
23 would be, would that be a nurse or a doctor?

22

23 A. It is usually, often in
24 collaboration, but at the beginning it would be

24

25



1

2 Mangera and she would likely set it. The Hospital
3 may have a standard routine, and if it does I don't
4 know, but it would be - it is the doctor's responsibility
5 anyway.

6 Q. Now logic tells me, and I
7 don't know if you would agree with this or not:
8 if for instance the apnea monitor was set to go off
9 at 10 seconds, I would assume from that, that that
10 is because the doctor who decided to set it at 10
11 seconds would not have been particularly alarmed or
12 concerned with an apneic period of 9 seconds?

13 A. That would seem to make
14 sense, yes.

15 Q. Now, what we do know from
16 reading the chart is that there was only one
17 reference, positive reference in the chart to the
18 apnea monitor going off and that was at the time
19 of arrest in Meredith Froese's note, do you
20 agree with that?

21 A. I agree with that.

22 Q. Now you said before that
23 there was no reference in the chart to the monitor
24 not going off, and I accept that. The point is, is
25 it not the whole purpose of keeping the medical
chart to observe those things of significance?



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A. There are two things where

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I think we might be just a little bit confused.

4

I think sometimes where a monitor goes off - I am not
sure on those, certainly on the read-out on the
heart things, you see things bleeping away; and
whether on the respiratory monitors I am not sure
that someone might be able to look at it and say,
you know, there was this spell of five seconds but
it wasn't enough to trigger it because we have set
it at 10 or something like that. Whether there was
anything that was witnessed and whether that is so,
I am not aware.

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Q. Well, let me assist you.

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Dr. Becker in giving evidence in cross-examination
from Miss Symes indicated that it was the purpose
of the apnea monitor to measure chest movements;
and the purpose was to avoid, or not to avoid, that
is incorrectly summarizing his evidence. I believe
his evidence was it was to forewarn of future periods
of apnea, to give them a warning?

20

A. Well that is certainly so.

21

As you said before you don't want to set it at
10 minutes, the patient is quite dead by the time
you are there. So it is something that is set
well within the range that one would do something

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about it.

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Q. That is obviously why we have them on the monitor, the monitor on the child in the first place, to go off and tell us when we have a serious apnea spell.

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A. Correct, or an apneic spell that you want to be - do something perhaps, you know, you are made aware of it.

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Q. Now other than the fact - let me put it this way; subject to the obvious qualifications that you gave me before that there is no reference anywhere in the chart that it never did go off, can we agree that on a reading of the chart it would appear that it did not go off prior to the terminal events?

A. Certainly I have no quarrel with that.

Q. And had it gone off, would you not have expected that to be an event that they noted in the chart?

A. Usually they do, but sometimes we have apnea monitors that are called in, they go off and you go over and you find the patient is breathing away just fine. So, you know, there is something wrong with the monitor, so it is not an



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all or none situation. If there is a true apneic spell of that length, that is one thing, but if it is a faulty monitor that is another thing.

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Q. Now we know what it means in terms of the apnea monitor not going off, and I am going to ask you for the moment to assume, even given the qualifications you have given this morning, that it did not go off until the time of the terminal event; given what you understand to be the history of this child do you find that in any way curious?

A. No, I don't find it curious, because all it would say to me is he may have had periods of apnea but they were not of sufficient duration to trigger something that was set a little bit higher.

Q. All right and if ---

A. So what he is saying is there were not episodes, likely no episodes if the monitor is working at whatever that was 15 to 20 seconds, I think they put a range on there.

Q. You agree with me that if these periods of apnea were clinically significant, the setting on the apnea monitor would have been such that had these episodes occurred the monitor would have gone off?



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A. Well, that is, you know it is like everything else in the Bell Curve one has a range of normal and so one picks something, picks something where they would like to be notified, but on the other hand, you know, in normal people there will be a grey area where some babies who have apnea, 5, 6, 7, 8 seconds are perfectly normal. There will be some who have something seriously wrong who may be the same. So the setting of the monitor takes things into account of what they find on the mean and on the average, and one or two seconds somewhere is not going to make a difference because somebody is in that room.

Q. All right. Now, Doctor, are you aware of the fact from your reading of the chart, that up until the time of the terminal events with respect to Jordan Hines, there did not appear at any time before that, to be a need for any resuscitation efforts to be taken on this child?

A. That is so, yes, except by mother.

Q. Well, that is precisely the next thing I was getting to. What we know from the wording of the chart is that she shook the baby?

A. Yes.



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Q. We don't know anything else
about what she might have done or not done, do you
agree with that?

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A. That is what the chart says
and I am prepared to accept that, yes.

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Q. So what we have got is this;
we have got an episode at home where she shook the
baby and where the notes indicate there were
observations of shallow breathing. We have observations
at North York General of apneic periods, none of them
measured. We have observations at Sick Kids of apneic
periods, none of them measured up until the terminal
events. We have got the fact that the apnea monitor
at no time went off. Is that a fair summary of what
we have got in terms of the chart?

A. It is a fair summary.

If I might say, that apnea is one thing; apnea with
cyanosis and apnea is another thing; and apnea with
cyanosis that picks up when the baby is stimulated
is still another thing. That is, we might accept
that apnea in a young baby where both you and I
have agreed it is a pretty common thing in young
babies for them to have periods of apnea, if those
babies had apnea with cyanosis we would certainly
be on the alert, we would not accept that as an



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apneic spell that was of no consequence. So the
apnea plus cyanosis plus the fact that where mother
did something the baby did something, that is pinked
up, tells me a completely different story than short
periods of apnea.

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/DP/ak

Q. Well, okay. Can we agree -

let me put this to you, that Dr. Rowe in his evidence
and as well Drs. Rose and Fowler agreed with me that apnea
in fact can be caused or be the result of periods of
bradycardia. Do you agree with that?

A. I guess if you get brady
enough, it is usually the other way around, from my
point of view, that the bradycardia is often caused
by apnea. I don't think I was aware of bradycardia
causing apnea, no.

Q. If the heart rate slows down
sufficiently to interfere with lung function, would
that not cause apnea?

A. It would probably make you
breathe faster but on the other hand if it starts
interfering - no, I guess it should make you breathe
faster because you are trying to compensate for it,
trying to get some oxygenated blood around. But you are
going to get down to a point where you are going to
interfere with the function of nerves and nerve conduc-
tion.

Q. Do you agree or disagree that
apnea can be caused in some infants by severe upper
respiratory infection?

A. Do I agree or disagree? It
certainly can and if you want to see it - again, if



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you have a newborn baby at home, just go home and tweak his nose, and don't say that I told you to do it. If you want to see apnea going on for 5 or 10 or 15 seconds, you will. So a baby breathes through his nose in a obligatory manner until he is five or six months of age and a simple plugged nose can cause apnea. Some babies who are born without their nasal passages, the minute they put the nipple in their mouth to suck they die of apnea.

Q. You note in your report under the summary of Jordan Hines, and I'm referring, Mr. Commissioner, to Exhibit 48, page 17:

"In addition this baby had a congested nose and as babies breathe through their nose and can die from a simple nasal obstruction this may well have been an additional trigger mechanism for the final episode."

A. Correct.

Q. So obviously it is your view that nasal congestion itself can lead to periods of apnea?

A. It certainly can, yes.

Q. And we know in the Hines case that the mother has said that the baby had choking



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spells. Do you agree with that?

A. Yes, she said that he had choking spells.

Q. We also know that there is reference in the chart to the child having to be suctioned.

A. Correct.

Q. There is also reference in the chart to thick mucus discharge from the nasal passages?

A. That is correct.

Q. So it is clear that this child was pretty congested?

A. He had a cold in his nose, yes.

Q. Do you agree with me that that possibly could have accounted for some of the periods of apnea?

A. It certainly could be a trigger, but as I say there is a trigger - for example, you may have read somewhere that prematurity is associated with SIDS and one of the interesting things of prematurity as a risk factor does not appear to function unless there is a super-added infection, very often respiratory.

So, yes, the answer to your question



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3 is yes, that anything that interferes with the
breathing mechanism can be a trigger mechanism.

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is yes, that anything that interferes with the
breathing mechanism can be a trigger mechanism.

Q. Is there a distinction between
saying that it is a trigger mechanism and that it
can account for the periods of apnea. I phrased my
question that way. I said do you agree with me
that this severe nasal congestion could possibly
account for apnea?

A. As I have said to you, if you
hold a baby's nose he will stop breathing, so nasal
obstruction can and does cause apnea - may, not
always - there are different people.

Q. Let us talk about brain stem
scarring, brain stem gliosis, the nuclei --

A. Whatever those words are, yes.

Q. Dr. Becker told us that this
can be caused by lack of oxygen such as you get with
apnea. Do you agree with that?

A. If Dr. Becker says that, he is
the expert on it.

Q. So I take it there is absolutely
no difficulty in my assuming that if a child had
apneic periods for one reason or another you might
get, with the onset of those apneic periods, a process
whereby you would start seeing scarring of the brain
stem?



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A. So, you see, this is the real problem that the pathologists are faced w^tth and they will have to come up with an answer, which is the cart and which is the horse, and that has not been answered.

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Q. I agree, but let me give you a hypothetical.

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A. Well, that is it. That is the hypothetical case, there is an argument as to which causes which and so either is possible.

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Q. Let me put this specific hypothesis to you. I'm going to use your example. Let us say that for a period of several days I, every six hours, pinch a baby's nose and interfere with his breathing for 20 or 30 seconds. As a matter of fact, in order to come within Dr. Becker's other qualification, let us say that I do this for a period of several weeks, three or four weeks. Then I administer a massive dose of arsenic to that child. The child clearly dies from arsenic poisoning. When we examine that child post mortem, according to what you have told us this morning, we ought to see some evidence of brain stem scarring in that child.

A. I don't think that. I think that is paraphrasing a little bit or taking poetic



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2 licence with what I have said. Most babies have
3 five or six colds a year so they are in that
4 situation where they have a plugged nose, or maybe
5 up to a week, the average cold lasts a week, and yet
6 on routine autopsy or the controls that I take it
7 that people have or will use in Dr. Becker's work,
8 one does not find those changes. Neither does one
9 find the changes that Dr. Naeye refers to, the
10 pulmonary arterial things, in a lot of patients. He
11 finds it in 60 per cent of SIDS and I think his
12 feeling is that there is some situation that is
13 going on, not from tweaking the nose for 10 periods
14 of 20 seconds a day but some chronic underlying thing
15 that is giving you some, as the mother said, shallow
16 respirations for that period of time. It takes two
17 to three weeks, he thinks, in order for those changes
18 to occur, and I would take it they would be chronic
19 changes.

20 Q. That was actually my next
21 question. You agree therefore with Dr. Becker's
22 observation that it would take about two weeks after
23 the onset of the periods for that scarring to start
24 showing up?

25 A. I don't want to speak to the
scarring because I don't know about that. I am



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referring to Dr. Naeye's work primarily and if
Dr. Becker said that about his own work, I will
accept that.

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Q. With respect to the scarring,
subject to that qualification that you have just
given, that you don't know too much about the scarring,
is my hypothesis not perfectly reasonable?

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A. Which?

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Q. The hypothesis that if I
interfered with the child's oxygen supply on a
regular and repeated basis for prolonged periods
over a two to three week period, I did not say we
definitely would see brain stem scarring, I said we
might on autopsy see some evidence of brain stem
scarring.

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A. I would be very surprised,
frankly, because you know you are talking matters
of seconds or you are going to kill the baby and
you then would not have the time to do it many more
times. This is a chronic situation. We know for
example that certain children with adenoids get into
a real heart failure problem, but that is so rare, so
far, but it happens because they are mouth breathers,
and that is a situation that is there the whole time,
or they are not mouth breathers, they are nose
breathers, and it interferes.



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So, no, I would not go along with
the fact that if you as a person or a child with a
little cold had a plugged nose intermittently for a
week or two would have those brain stem changes.
I would be very surprised.

Q. Doctor, not intermittently.

I said on a regular basis lasting 15 or 20 seconds.

A. That is intermittent,

Mr. Tobias, I'm sorry. I would interpret - we are
talking at cross purposes - anything that is not
constant is intermittent.

Q. Hines was first reported, the
first documented incident that we have is the
incident at home.

A. Correct.

Q. It happened either on March
4th or March 5th, depending on the admission dates
to the Hospital. That would be less than two weeks
prior to death.

A. Correct.

Q. When I asked Dr. Becker about
that, he said that that could be accounted for by
periods of apnea which occurred prior to March 5th,
1981, but that no one observed. Do you agree with
that?



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A. Certainly I agree with that.

I think this was Dr. Naeye's point. Dr. Naeye's point in this is that probably, depending on when the kiddy died, may well be in utero in the womb.

Q. If we should satisfy ourselves, and, Doctor, this question is subject to the obvious limitation that we cannot satisfy ourselves, but if we could satisfy ourselves somehow that prior to March 4th or 5th there were no aneic periods, that the mother did not miss it, that they just did not occur, would that cause you some difficulty with respect to these four pathological markers that show up just four or five days later, rather than two or three weeks later?

A. None whatever because, as I say, I do not think you are in a position to do that, nor is Dr. Naeye, nor is anyone else as you showed me from the British study that you quoted, that there was no such witnessed : apnea even by monitoring. So that is not going to affect - I think there can be some clinical apnea, there can be the normal apnea of babies, there can be little blue spells. Mothers are not in a position to be looking at babies 24 hours a day, so that does not bother me, no.

Q. Was not the whole point of the



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British Journal of Medicine article that prolonged periods of apnea are not necessarily seen in SIDS cases and are not necessarily a good indicator of what infants will die from SIDS?

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A. I think that is true and as we have said there are 72 or more theories, including the one this morning that wants to throw out apnea and say that apnea is secondary. I think what is not in the British article and which should be, it would have been very nice to see whether in the pathological findings there were these subtle changes, and there is no reference to that that I could see, but I may not have read it.

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Q. With respect to the other three indicia, and I am referring now to extramedullary hematopoiesis, the thickening of the pulmonary atrials and the persistence of brown fat, do you agree with me that with respect to all of these things once sees them quite often as a result of hypoxia?

A. I am just saying what I said to you previously, that Dr. Naeye has, I think, whether he has seen them or has postulated - I think has seen them in people who live at a high altitude. If you were to ask me are they seen commonly from kiddies with chronic hypoxia, are they seen commonly



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3 at all, to the best of my knowledge, no. You would
4 have to ask the pathologist about that but I have
5 not heard our pathologists say they have seen those
6 findings in any other things. I do not know how
many SIDS they have seen them in.

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Q. Perhaps I have misunderstood something. Correct me if I'm wrong. I thought that Dr. Becker had indicated that these three findings are findings commonly seen in cases where you have indications of chronic hypoxia, I thought that chronic hypoxia was nothing more than a lack of oxygen.

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A. It is that, but some of the findings - everything is a matter of degree. So if you had, for example, from what you are saying, then one would expect to find that in every blue baby who died. Correct?

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Q. No, that is not what I am saying, Doctor.

A. I would, you see, because the fact that the baby is blue means that it has hypoxia or hypoxemia, which is oxygen in the blood. So every blue baby should have those findings if they were there because certainly it is chronic, you know, they have had it for years.



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Q. Do we agree, Doctor, that you won't necessarily have those findings in every blue baby?

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A. I have already said that, that was my point, I think, that it is in 64 per cent only of the SIDS babies.

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Q. Precisely, and therefore the proposition is obvious, you won't even find it in every case of SIDS.

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A. That is right.

Q. But is it not common - I won't even use the word common - is it not often seen, those particular three indicia, as a result of chronic hypoxia?

A. I've already answered that.

Q. Not in every case, but in some cases.

A. I have answered that, that I would expect, early on, in babies, and I think I made the point, I don't know about brown fat, because I don't know much about it, I think most people have thrown out sort of as a marker but the extramedullary hematopoiesis can occur early on. I have not seen the business about the pulmonary arterials referred to so my answer to your question is, I don't know.



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Q. Fine. Now, I would like to talk to you for a few very brief moments regarding the presence of arrhythmias as exhibited in Jordan Hines in the terminal events. I believe you gave an opinion the last day to Mr. Strathy that the presence of arrhythmias cause you no concern at all with respect to a diagnosis of missed-SIDS. Do I have that right?

A. You do.

Q. I take it then that you are to some extent disagreeing with Dr. Hastreiter who did feel that the presence of arrhythmias were a specific reservation in the diagnosis of SIDS.

A. I am not quarrelling with Dr. Hastreiter. You have asked me my opinion; I have given it to you.

Q. Dr. Phillips, when I cross-examined him, and this appears, Mr. Commissioner, at Volume 59, page 3153, thought that it was most unusual that one would see arrhythmias in cases of SIDS and in fact was only satisfied with the diagnosis of SIDS after Dr. Becker explained his hypothesis to him.

A. All I can say to that, Mr. Tobias, is that there are many areas of medicine



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and people cannot be experts in all of them. I think
in this situation one has to turn to the experts in
the field. I think if you read the article you
referred to today by Shannon and - whatever - and
the other ones that are in evidence from Dr. Valdés-
Dapena and the one I entered in evidence the other
day from Warren Guntheroth, if you look at those,
and now if you look at the two things that are going
to be presented in Anaheim, California, the fact that
there have been such changes is commonly known by
the people in the field and some people now are
swinging over to - I already referred many times
to the doctor who seems to commute from Milan, Italy
to Galveston, Texas and he has for seven years felt
that this was the cause.

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A. Now, he may have some
substantiation from these articles in Anaheim but that
is not a - so, looking at an individual case I have
no concern whatsoever.

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Q. Well, Doctor, do you agree with
me on the other hand that the Exhibit 180, which was
the excerpt from the British Medical Journal,
Dr. Southall's article.

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A. Yes.

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Q. One of the findings of that
study was that arrhythmias aren't a very important
factor in diagnosing SIDS death?

A. Absolutely right, but Dr.

Southall did not say that they do not occur, in fact,
they did occur in one of his cases but it was on kind
of the borderline of probability that, as he said, he
left it open, he didn't back out. He said it could
have been something that we will find later, it could
have been chance.

Q. Well, as a reasonable scientist
he would have to allow for that possibility?

A. Right, and that is what I'm
trying to be is a reasonable witness, Mr. Tobias.

Q. All right, fine. Now, with
respect to the article that Mr. Scott put into evidence,



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2 the Kelly and Shannon article, there was reference in
3 there, I take it you are familiar with it, that
4 arrhythmias are found only in very rare cases?

5 A. I don't know, I would have to
6 look that up, but even if they say that then, again,
7 I am satisfied with that.

8

Q. All right.

9

A. I am satisfied that they occur.

10

Q. All right. And the specific
11 cases that the Kelly and Shannon article referred to
12 were three particular cases where a marked QT interval
13 was seen. We know that in Baby Hines there was no
14 evidence of a prolonged QT interval. Dr. Fowler read
15 the rhythm strips and told us that. My point is this,
16 Doctor.

17

A. May I respond to that, Mr. Tobias?

18

Q. Please do.

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A. Insofar as the QT interval, if
you read further in the articles by Shannon and by the
others, you will find there is a tremendous
controversy as to whether a QT interval means anything
because methods of measuring it are very difficult
and must be under very controlled circumstance and
that there have been instances reported where the QT
interval was prolonged, there have been instances

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etc., etc.

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2 reported where the QT interval was prolonged, there
3 have been instances reported where the QT interval
4 has been shortened. I think the sum and substance
5 at the moment is that they have a big grain of salt
6 about QT intervals at all and therefore one way or
7 another would not influence me.

8

Q. Well, Doctor, let me put this
to you. You have indicated to me that the presence
of arrhythmias don't cause you any concern?

9

A. Correct.

10

Q. And you have indicated a number
11 of very learned researchers who share that position
12 with you, the articles that you have put in this
13 morning?

14

A. I share it with them because
they are the researchers, Mr. Tobias.

15

Q. All right, that you share with
them and you have put in a couple of excerpts this
17 morning regarding the Anaheim studies, you have
18 several times mentioned about the Italian studies and
19 the studies in Texas, but we do know that Dr. Hastreiter
20 and Dr. Phillips had some concern. We've got the
21 Kelly and Shannon article and, more particularly, we've
22 got the British Journal of Medicine article, isn't it
23 fair to say that the whole question of arrhythmias

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2 accompanying SIDS is really subject to pretty tough
3 scientific debate right now. I mean, there isn't
4 universal agreement, there are different schools of
5 thought?

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A. I think there are in almost
7 everything. I don't think anyone would disagree,
8 Mr. Tobias, that arrhythmias occur. The quarrel is
9 whether the arrhythmias are primary and the cause of
10 the SIDS - or secondary to things such as acidosis,
11 anoxia, you name it, there is no one quarrelling with
the fact that they occur.

11

Q. Well, how do you explain then,
12 Doctor, Dr. Hastreiter's apparent reservation?

13

A. I don't, and that is up to,
14 you know, as I say, people that have their - are
15 entitled to their opinions.

16

Q. All right. Now, you said that
17 whether or not they are the primary cause is what is
18 subject to the scientific debates. I put it to you
19 that I think, as I read the articles and the
literature and some of the doctors' comments that the
phenomenon of an arrhythmia accompanying the Sudden
21 Infant Death Syndrome is very much subject to a
22 scientific debate, do you agree with that or do you
23 disagree?

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2 A. No, I guess I have to disagree.

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I think what you are up against is the fact that most of the babies die at home and therefore are not in a position to have been monitored beforehand. So, in most cases people do not know what happened as a terminal event. Very often, even if it was a missed-SIDS, whatever, sort of smouldering along, many other things have been done that could have caused the arrhythmia and made it secondary.

The only report to date is the one that you have entered in as whatever and it had a patient that did have arrhythmias. So, that makes it a possible and one cannot say that it does not happen and in fact the other people in the literature who put it as the cause of SIDS feel that it happens a lot oftener than we suspect.

Q. Well, let me see if I understand your evidence right. Now, I am restricting this question solely to the concern about the arrhythmias being present in cases of Sudden Infant Death Syndrome.

A. Correct.

Q. And you would argue on your interpretation of the literature and the various comments that you have seen that it is universally accepted that that is quite consistent with a SIDS death?



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A. Yes.

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Q. All right, fine. Now, are you aware of certain references in the literature to the fact that Sudden Infant Death Syndrome is rather uncommon or, sorry, that Sudden Infant Death Syndrome is more common and more usually seen in low birth weight children?

A. Well, it is a hooker and I guess this might be as good a place as any. Not more commonly at all, 20 per cent by world things. So, that means 80 per cent are in a full term. So, that is 20 per cent and, you know, you look at whatever end of that telescope that you want to look through. I would say that there are many other groups, the full term groups are much in preponderance.

In New Zealand they did a study and 5 per cent of theirs with prematurity had SIDS. Dr. Shirley Tomkin in New Zealand, and I mention her specifically, not only was she here and had a great theory that a lot of these babies' jaws fall back when they fall asleep and they choke that way or they cut off their air that way, her theory was 13 per cent. Now, why am I leaning on that a little bit? Well, because I wondered the opposite. I wondered the opposite that Jordan Hines is a big baby and we know



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that prematures who have Sudden Infant Death Syndrome don't show it until later. They do not show it at the early part of the period, they usually - whereas, the peak is two or three months they are a little more apt to be at the high end of that period.

So, I wondered out loud or to myself

whether a big baby being more mature and whatever these things are might show SIDS earlier, as Jordan Hines did and lo and behold Dr. Shirley Tomkins beat me to the punch and has reported that in her series big babies tended to have it earlier.

So, my answer to your question is, yes, it has a fair incidence in prematurity, 20 per cent only, whereas, 80 per cent in others that they tend to occur later in life.

In the recent paper, and I think it is one of the ones you have quoted, that with the risk factors, using it as a risk factor, unless there is a super-added infection the risk factor goes out.

Q. All right. Now, are you aware of references in the literature to the fact that Sudden Infant Death Syndrome is uncommon with respect to neonates?

A. Well, I think I just answered that question when I said that if you want to look at -



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2 I don't know whether you have entered in evidence
3 there is an article in Scientific American again by
4 Richard Naeye, and I have a copy if you wish, it is
5 in most of them but he said that the onset was at
6 three weeks, usual onset, he may even have said two
7 or three weeks but certainly no more than three, and
8 I have added to that that in Jordan Hines because he
9 is a big baby he may well have shown it earlier,
10 according to Dr. Shirley Tomkins from Aukland, New
Zealand.

11

Q. All right. Now, referring to
that portion of your report that deals with cardiac
status and prognosis. My understanding of the previous
evidence that it was Dr. Freedom who scored the
infants on that basis and not yourself, is that
correct?

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A. I believe I said Dr. Rowe and
Dr. Freedom, did I not, in my report?

18

Q. Dr. Rowe and Dr. Freedom.

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A. I think that is what I have
said.

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Q. All right. Are you in a position
to help us with respect to what their reasons were
for scoring any particular child a certain way?

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A. No, I'm not.

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Q. All right. You haven't discussed it with them and wouldn't be able to help me with respect to that information then?

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A. No.

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Q. Now, we have heard the following

question put to Dr. Becker by Miss Symes in his cross-examination. She pointed out to him the arrest note of Meredith Froese and pointed out that on a reading of that note it would appear that in the Jordan Hines case the cardiac monitor went off before the apenic monitor. With that observation the doctor agreed and Miss Symes then asked him whether there was any significance attached to that observation and Dr. Becker told us that he really couldn't answer that question and that we would be better off to ask a cardiologist.

Tell me, can you answer that question?

Do you attach any significance to that?

A. No, I don't. I think it is

along the line of what I said to you a while ago that apnea could cause bradycardia but I didn't think bradycardia could cause apnea. Now, if the monitor is set a little bit on the high side, let's say 15 seconds, perhaps after 10 seconds there was enough of the blood falling down, not enough to trigger what



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2 the thing was set at but enough to trigger the heart
3 slowing down and triggering the cardiac monitor. So,
4 I think it is perfectly compatible.

5 Q. All right, so that you would
6 attach no particular significance?

7 A. No significance.

8 Q. As to which monitor went off
first?

9 A. No significance.

10 Q. All right, fine. Now, with
11 respect to page 43 of your report.

12 A. My report or the other? My
13 report I think you said.

14 Q. I am referring to the reference
15 on page 43 to Jordan Hines. This is in the section
16 of your report entitled Digoxin Data. There is a
reference in there that:

17 "Dr. Cimbura concluded that the
18 fresh heart tissue would have
19 contained not less than 252 nanograms
20 per millilitre and this should be in
21 the toxic range or in the overlap
22 therapeutic range. He also had
23 tissue that he received on the 9
December, 1981 which was liver and
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"muscle from the right thigh obtained from the exhumed body (exhumation on the 4 December, 1981). The liver showed 240 nanograms of mixed digoxin and digoxin-like substances. From the literature he had ascertained that therapeutic concentration in the liver were 11 to 156 nanograms in infants and neonates and 2.1 to 190 in adults."

And then you go on on the next page with some references to the findings in the thigh muscle. Is it fair to say from that, Doctor, that subject again to the pharmacological debate you would certainly not rule out digoxin toxicity and until that debate is decided you would have some concerns regarding the possible role of digoxin toxicity in this death?

A. I would turn it around exactly the other way but I will end up by saying that I am not a clinical pharmacologist, I think this is the basis of the whole investigation. I feel that the experts in the field are the ones to comment. I would not go along with the statement you made as to what I thought about it.



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2 Q. I am sorry, Doctor.

3 A. I will not go along with the
4 statement that you said that I would say that it was --

5 Q. All right. But now we have
6 your evidence in that regard?

7 A. I have already gone as far as
8 I can in my conclusions and stating that we have been
9 told this and the significance of this must come
from the experts in the field.

10 Q. All right. Now, finally, when
11 I was cross-examining Dr. Phillips the other day, I
12 put to him the following proposition and that was as
13 follows, that the Hines' death, according to his
14 understanding of Dr. Becker's theory, was fully
15 compatible with Sudden Infant Death Syndrome but at
16 the same time it was compatible with digoxin
17 intoxication. Dr. Phillips agreed that he couldn't
18 definitively resolve that riddle, as it were. He
19 agreed with me that he couldn't rule out either one,
there is just no answer as of right now. Do you
20 agree with that?

21 A. Mr. Tobias, if you will read
22 my conclusions you will read what I have said and I
23 said that however we are told and therefore the
significance of those things must be decided by the
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2 clinical pharmacologists. I said also two or three
3 times that I felt that this was a serious enough
4 situation that it is not one for me to be postulating
5 this, that or the other thing and we need some facts
6 and we need it from the experts in the field.

7

MR. TOBIAS: All right. Thank you,

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Doctor, those are all my questions.

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THE COMMISSIONER: Thank you, Mr. Tobias.

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Mr. Labow, are you next?

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MR. LABOW: Yes, I am, Mr. Commissioner.

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CROSS-EXAMINATION BY MR. LABOW:

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Q. Doctor, my name is Stephen Labow
and we represent the parents of a number of the
children.

14

A. Yes, Mr. Labow.

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Q. Who died in this matter. But
before I get into the specific children I would like
to ask you a few general questions. Doctor, you have
explained that when you began this review in mid-May
of 1982 --

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A. Yes, I think that is when I
began.

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Q. -- you weren't told why you
were doing it but your impression was ---

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A. I think it was June.

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Q. It was June?

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A. I was shaking my head there

trying to remember but I think the trial with Justice Vanek was towards the end of May and I think that it was early June. But that is neither here nor there, I don't think.

Q. No. You weren't told why you were doing the review, is that correct?

A. I wasn't told why. I think I tried to enlarge upon that a little bit. I don't think anybody could have said why except the people -- we were so frustrated by the burgeoning number of reported cases that we felt that it was time that we looked at the situation to see what the histories showed. So, I think it was no more, no less than that. I think if you read the introduction to my report I state in that what I understood it to be. It is on page 1.

Q. You at the time had a consulting practice and had done consultations on I'm sure many children?

A. Yes, that's true.

Q. And your practice was to see the child to do a history, is that correct?

A. That is correct, you know, that



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2 is what a consultation is, yes.

3 Q. Had you ever done a consultation
4 of this kind dealing with children who had died?

5 A. Oh, I don't know whether you
6 would call it a consultation. If you ask have I ever
7 done chart reviews, certainly, yes, because when one
8 publishes a paper one goes back to the literature,
9 whether it be in your own hospital or whatever and you
10 must rely on things. This is why we try to get
11 histories as good as they possibly can because a lot
12 of people need it for other things. So, the answer
13 to that is, yes, many times.

14 Q. Had you ever done a chart
15 review of this magnitude?

16 A. Oh, yes, I had one that had 900
17 that I published ones that had 900 cases at the
18 Hospital.

19 Q. And that was at The Hospital
20 for Sick Children?

21 A. Yes, it was. It may have been
22 600 but bear with me, it was way back in the early
23 fifties when I was young and full of ...

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DM/cr

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2 Q. Doctor, when you did that
3 kind of review, a chance review, after doing your
4 review of the actual chart did you generally go back
5 and discuss the matter with the physicians involved?

6 A. No, I did not.

7 Q. Now when you did a
8 consultation, did you generally go back to discuss
9 the matter with the treating physician?

10 A. No, I would send them a
11 report of what I had found.

12 Q. You wouldn't ask them what
13 their impressions were?

14 A. Very often when they
15 referred, their impression was there either in a
16 word or in an accompanying letter, which I usually
17 try to put out of my mind until after I had drawn
18 my conclusions, then I would do, if you will, a
19 chart review of their chart review usually before
I wrote my letter to see if we were on the same
wave length.

20 Q. Doctor, when one reviews
21 the charts at the Hospital for Sick Children, is
22 it correct to say that the cardiologists involved
23 don't write down every impression in the chart?

24 A. They have a series I think

25



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2 Dr. Rowe was talking about zebras one day here, a
3 zebra sheet. They have their own system of records,
4 because they know that the records with different
5 doctors taking history at all times may not have every
6 bit of information they want on their cardiology
7 cases. So in addition to what is on the chart they
8 have a zebra sheet which must be filled out and that
9 is kept in their own, in a special part of the
10 Hospital so they have control over it, it is a
mini records room of their own.

11 Q. Doctor, did you, when you
12 did - when you looked after children in the Hospital,
13 did you - where did you keep your zebra sheet?

14 A. I have an office and I
still have all my files in my office.

15 Q. So do the doctors keep all
16 the zebra sheets that they work on?

17 A. I think they are kept in
the Department of Cardiology, yes.

18 Q. So it is your understanding
that all the zebra sheets are kept?

19 A. Yes.

20 MR. LABOW: Mr. Commissioner, at this
21 point I would like to ask my friend Mr. Roland if
22 they could check to see if there were any zebra sheets
23

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2 done on the six children that we represent. I have
3 asked Commission Counsel, and at the time they did
4 not have the zebra sheets for the six children that
we represent.

5

6 MS. CRONK: Perhaps there is some
7 misunderstanding, Mr. Commissioner. The Hospital
8 at our request very promptly provided us with a copy
9 of all the zebra sheets with the exception of one
10 of Mr. Labow's children and the zebra packages were
11 forwarded to him a week ago, so it may very well be
they have been mislaid in the mail, and I will
12 discuss this with him at the luncheon recess.

13

14 THE COMMISSIONER: You couldn't get
15 a faster answer.

16

17 MR. LABOW: I can't get a faster answer
than that.

18

19 MS. CRONK: I knew there would be a
20 reason for my coming down, sir.

21

22 MR. LABOW: Q. Doctor, my under-
standing from reviewing the charts is that in the
23 Hospital for Sick Children, because it is a teaching
24 hospital, it is generally the residents and the nurses
25 who make the notes that are found in the charts?

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A. You are probably right.

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The usual procedure in a teaching hospital and it

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varies from service to service. On the paediatric side, of which I have been a member for a long time, the initial history may be written and usually is written by one of the first year, or second year residents in paediatrics. Within hours and before usually orders are written, or just about the same time a resident with more experience does his note which is usually shorter still; within 24 hours a staff man is to have a note on the chart as well.

The reason for the delay is that

we used to put them on first and you can send it in with them, and the residents all complain because if they had a letter from us, just as I was saying a moment ago, if you get somebody else's note then you either think the way he does, or you find things you wouldn't have found because somebody else found them. So we are not allowed to put a note on the chart for 24 hours but we are supposed to have a note on the chart within, I have forgotten, the rules change at times, and this is one of the things addressed by Mr. Justice Dubin, and that is in place and I have forgotten the exact time, it is 24 to 48 hours.

Q. Now, that is the original

note. In addition my understanding is that most of



1

2 the notes throughout ---

3 A. You are talking about
4 progress notes?

5 Q. Yes.

6 A. You are talking about progress notes

Q. Are done by the residents

7 as opposed to the staff cardiologists.

8 A. It is a variable thing.

9 I can only say, and I guess I was criticized as much
10 for it as otherwise, is that in my own patients I
11 used to write a note every day if only to say the
12 patient is well, because I couldn't keep them all in
13 my own head so I would make a point of putting it
14 down somewhere else. Varying doctors, there are
15 some doctors who put a note or two a week on.

16 What happens during work rounds, which are twice a
17 week on the general paediatric wards, is after those
18 rounds with the staff doctors in charge the resident
19 is to paraphrase what is discussed. So, you know,
20 my answer to your question is I guess yes and no.

21 Q. Doctor, you have made
22 reference to the trouble that you had with the
23 convulsions?

24 A. Yes.

25 Q. That you found in 16 of the
children?



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2 A. Yes.

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Q. Do you offhand have a list
4 of the 16 children that exhibited convulsions?

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A. Yes, I do. I haven't gone
back to check these since I first did it. I guess -
let me go through a book I have here with little
notes to myself, and I wouldn't want these to be -
as I say I have not had time to check some of them
out, I think they are all valid except perhaps the
time, you know, I don't have the times here. Are
you ready?

Q. Yes.

A. Adamo, Cook, Dawson,

Estrella, but Estrella's were back in early December;
Pacsai, Fazio, Hodgkinson, Hoos, Velasquez, Leith,
Murphy, Shrum, Volk, Miller, Gardner, Monteith
and Turner, 17, every time I looked I kept finding
another one.

Now, there are varying things in
those, Mr. Labow, and this is why I feel a little
uncomfortable about them without going back and
having somebody else check them too, is whether
it was a real convulsion or some sort of
convulsive activity, you know, a minor thing, where
a face started to twitch or something like that and



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2 quickly went away; or as in Velasquez you remember
3 where he arched his back and we talked about that.
4 I am not sure it can be a convulsion, some people
5 think of a convulsion as going on to the real
6 shaking stage of it, and I am not referring to that,
7 I am referring to any part of convulsive activity,
any phase of it.

8 Q. Now reference was made to
9 Dr. Fowler's article, that is Exhibit 174, regarding
10 convulsions, and his table at page 189, whereby
11 clinically they found convulsions in 3 per cent of
12 the children that they looked at, and in the literature
another 6 per cent.

13

A. I think that was, what,
two patients of Dr. Fowler's, something like that.

14

Q. One in each?

15

A. Yes.

16

Q. One clinically and ---

17

A. Right.

18

THE COMMISSIONER: I'm sorry, what
exhibit was that?

19

MR. LABOW: 174, Mr. Commissioner.

20

Q. Now, in the study of Dr.
Fowler we were dealing with children admitted to
the Hospital for accidental digitalis intoxication?

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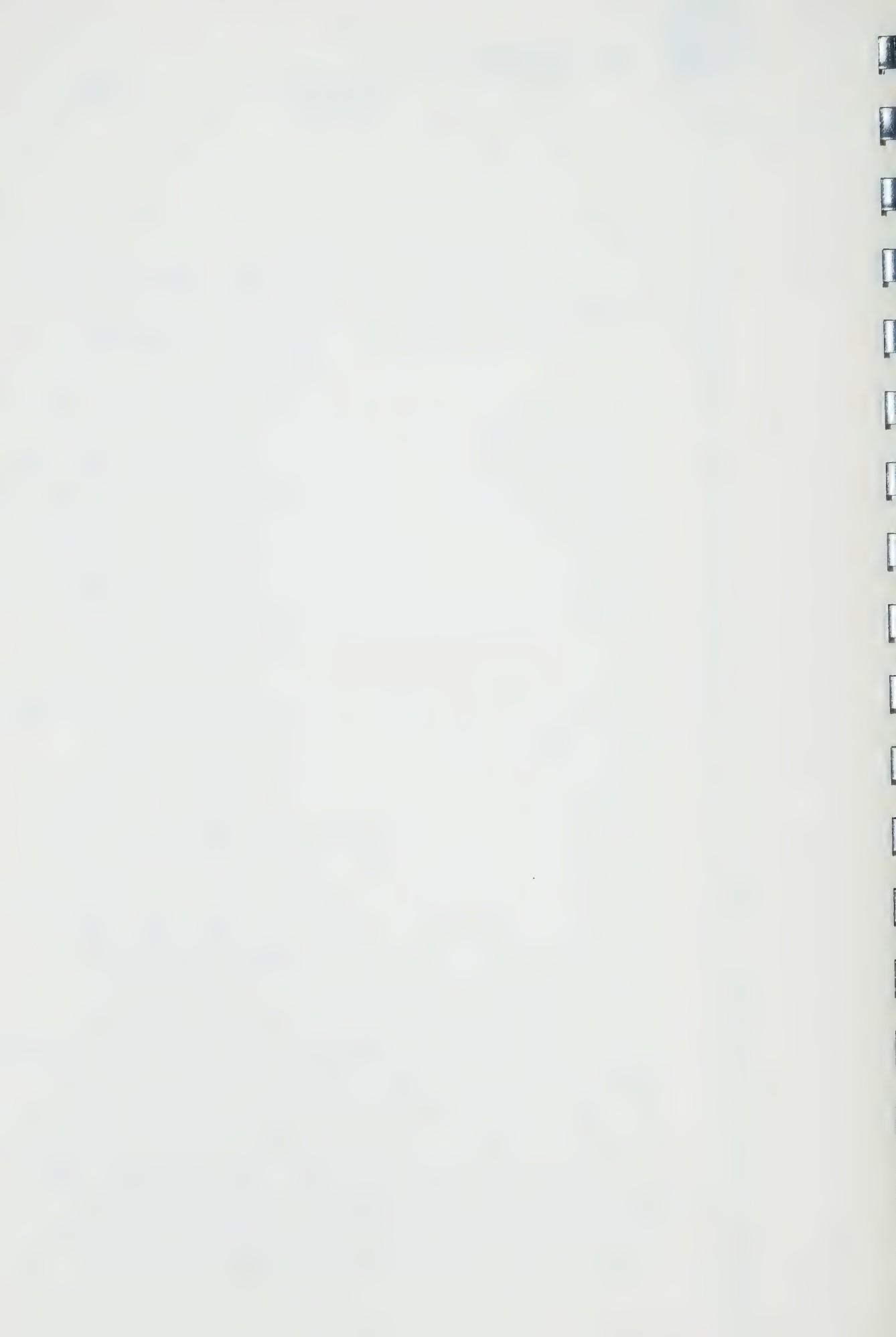
2 A. Yes.

3 Q. And they did find that
4 percentage of convulsions in those children?

5 A. Correct.

6 Q. Do you know if the per-
7 centages that they found, approximately 3 per cent,
8 measured up with the total percentage of children on
9 digitalis in the wards at that time; for example
10 if these 17 were 3 per cent or higher, or much
greater than 6 per cent of the children?

11 A. I think what one has to
12 do, Mr. Labow, is look at the percentage of patients
13 with digoxin toxicity who convulsed, not the
14 numbers of patients who are on digoxin. I think
15 it would be a very spurious conclusion to try to
16 get your percentage from those on it. I don't know,
17 you know, from other articles I have read, and if
18 I read Nelson's Text that I think I referred to
19 there, that they don't refer to convulsions as
20 being a toxic sign of digoxin, but they don't clarify
21 whether it is in normal patients, or on patients -
22 and this is the thing that I said, I don't know, and
23 I haven't seen a good article. The articles I have
24 read on it have been related to patients who had
25 normal hearts, and I don't know what it does to





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2 patients with sick hearts.

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4 On the other hand I have not read
5 anybody that is talking about toxicity of things that
6 says anyone who has said that it is a common thing
7 in patients with sick hearts on dig. with dig.
8 toxicity, to convulse. In fact I can't find any
9 such reference.

10

Q. In Dr. Fowler's article
11 at page 192 he refers to the monograph published
12 by Dr. Withering, and one of the major clinical
13 toxic manifestations of digitalis that he cites is
14 convulsion, in that specific article?

15

A. That was 1700 and something,
16 wasn't it?

17

Q. That was a long time ago.

18

A. I didn't check that out.

19

I am quite prepared to accept that Dr. Withering said
20 that. All I can do is take the modern - and he is
21 probably right, because those old clinicians are
22 very good, but I can only take the book, that is at
23 every doctor's right hand, of all the drugs and the
24 toxic effect of those drugs and the literature, and
25 as I say I have been unable to, but I plan to
continue to look and ask the experts in clinical
pharmacology when they are here, because I think it



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2 is an important question.

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4 Q. Doctor, there is also a
5 reference made to convulsions further on in that
6 article, in other studies, at page 195, when they
7 are talking about general findings on the central
8 nervous system.

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A.

I think my recollection of

it, and I don't want to go through it now, I will be
glad to, but my recollection was in Dr. Fowler's
patient that it occurred some 36 hours after admission
and that he then went back, or somewhere I read on
experimental work and it was referred to in the
meeting last week strangely enough about the
neurological signs of dig. toxicity, it wasn't
convulsions but it was the nervous system, or their
effects on the nervous system like coma or what have
you. It was also stated, and I have forgotten
whether it was the cat that was resistant, or the
dog that is resistant and the cat that is susceptible,
you will recall Mr. Lamek. There was some such thing,
and there was some rats thrown in there too.

The point of it was that in those,

I think the rat is very resistant is he not, but in
the cats, the line between them getting, showing
convulsions was equivalent to the lag that Dr. Fowler



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found in his patient, you know, taking - I don't

know what a cat's life is compared to humans, but a dog is said to be about seven. So taking that into account there was still this delay. So again in the rats, because they are very resistant to the dig. killing them through their heart, that after a certain delay period they showed neurological signs. I am talking - I am sorry I am probably confusing you no end.

All I can say is that it appears that there is, even experimentally, there is a lag period in digoxin causing central nervous system things and the cardiology things show considerably before it.

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Q. Doctor, one of the things you did look at were the autopsy reports of these children?

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I.

A. Yes. Some were available to us and some are starting to appear on the chart now. I think I made a point before anything that was a coroner's case, or anything in the past until very recently went to the pathologist and we did not have reports. So I can tell you though in specific cases you ask about I will say I either had it or I didn't.

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Q. We have been told by most
of the pathologists that if the clinicians did not
cite digoxin intoxication as a possible cause of
death then generally they would not look for it.
That is my understanding of the evidence?

A. Yes. Well, if they have
said that I am not going to try to alter that, but
I would say if one goes back to that period in time
you must remember the state of the knowledge then,
I believe Dr. Hastreiter when testifying before
Judge Vaneč said there were only six cases in the
literature prior to that in which tissue levels had
been done.



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2 Insofar as post mortem blood specimens are concerned
3 you have seen over the past few days the problems
4 even associated with those. So I would think -- well
5 I know they are telling the truth. They did not do
6 it unless it was suspected.

7 Q. You are discussing the inter-
8 pretation of the levels. The pathologists seem to
9 indicate first of all that if the clinicians did not
10 point out that digitalis intoxication was something
11 they should look at, they did not, and that the only
12 test that they could do would be an assay of the blood
13 or serum?

14 A. Correct. I think that is fair,
15 yes.

16 Q. Do you agree with me that it
17 would be fair to say that the pathology reports are
18 not all that useful in this review, if we are looking
19 specifically at digoxin intoxication, unless they were
20 pointed out to the pathologist?

21 A. That is correct, yes. That is,
22 one cannot say what levels but that is the real
23 problem we are faced with in everything, is the value,
24 even where they were determined. That is what we are
25 hoping that clinical pharmacologists will help with.

21 Q. Doctor, in your report at page 16,



K.2

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2 you point out that regarding the Janice Estrella
3 specimen, Dr. Gilbert Hill stated there were also
4 technical problems with the collection. Did he state
5 that to you after you went to discuss it with him?

6 A. He must have, or else we both
7 at that time sat on the Risk Management Committee. In
8 the first instance when I gave my report I gave it
9 to the Risk Management Committee or the special Ad Hoc
10 Committee of the Risk Management Committee and he
11 probably said - you know, I said it is another
12 specimen and he said there were technical problems
13 with that one, too. That is my vague recollection, and
I think it is correct.

14 Q. This was not something that you
garnered from the Hospital record itself?

15 A. No, none of that was in the
16 Hospital record. There is, somewhere along the line
17 there are two memos in the chart from Dr. Hill and I
18 am not sure when they appeared and the dates on them,
19 but with that qualification - but I don't think so.

20 Q. Doctor, obviously the technical
problems with that sample have a lot to do with your
21 conclusions about that child?

22 A. Correct.

23 Q. And it was important to learn

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K.3

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2 what the technical problems were?

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A. Yes, that is so.

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Q. Did you discuss it with Dr. Hill
at any length?

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A. I think what happened, and I
think I said on the first day, my concern was that on
day one or at least early on - some time - I could
not quite remember whether it was when Judge Vanek
was looking at the case, somebody came up to our
Ad Hoc Committee of the Risk Management Committee
from Pathology and told us how they had collected
the Estrella specimen. I was concerned, and I think
said out loud that day, I am sure, what does heart
failure fluid that would back up into the liver and
into the abdominal cavity, with its free fluid and
everything, what does it contain, because I don't
know anything about this. I suppose somewhere along
the line that they got another specimen and I suppose
it was at that time that Dr. Hill said there were
technical difficulties here too. I think that is
as much as I can say. If I am not answering your
question, fire it again, please.

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Q. My question involving that
deals with the Kristin Inwood sample. Your under-
standing is that there were technical problems with



K. 4

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2 those samples, not necessarily in collection but
3 prior to assay?

4 A. My concern with Kristin Inwood
5 was that - I think it was a year or a couple of years
6 more than a year anyway after Kristin's death, the
7 main specimen that had that tremendously high level
8 was found - I'm not sure where it says, just a week
9 or two ago, I was trying to find another Inwood
10 specimen so I checked and I believe it was found in
11 Dr. Middleton's, who is our Chief of Virology, in his
12 refrigerator. It was interesting to me because I
13 think if one goes back, I am probably on shaky ground
14 here, but a meeting the Hospital held away at the
15 very beginning when they called everybody together,
16 I was down at Anaheim then at Disneyland, but when
17 they called it together, one of the things they said -
18 they sent back all of the people to check their
19 refrigerators, I believe it was the blood bank, I
20 believe it was Clinical Chemistry, I believe it was
21 Virology, to see if there were any specimens. So I
22 don't know whether that was done or not.

23 Now a year later or so, a specimen
24 is found and no one knows exactly where the specimen
25 came from. I have written a note that it came from
a saggital sinus up here, then someone the other day



K.5

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2 said no, that is not so. So that is for the
3 clinical pharmacologists to talk about.

4 That specimen, it said, had been
5 treated with heat and then later was analyzed. I
6 think you have heard or will hear Dr. Kauffman talk
7 about a lot of digoxin being in red cells, and my
8 question at that time was what does he do, because
9 it destroys red cells, does it let out enough? That
10 is a question I would like the clinical pharmacologists
11 to address. That is why I was concerned about Inwood,
the very high specimen.

12 Q. I will deal with that sample
13 later when I deal with Inwood, but my one question
14 before we break is, do you have any basis for your
conclusion that heating would give a higher reading?

15 A. None whatever. That is what
16 I wanted to hear. As I said, I don't know anything
17 about these things but one does not have to know
18 anything to ask stupid questions and I am asking a
19 lot of stupid questions of the clinical pharmacologists
through somebody or other next week I hope.

20 MR. LABOW: Thank you, Doctor.

21 Mr. Commissioner, I will be moving
22 into the specific children next, so I think this
23 would be a good time to break.

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K.6

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2 THE COMMISSIONER: All right.

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MR. TOBIAS: Mr. Commissioner, I am pleased to advise you that you are off the hook with respect to funding my trip to Disneyland. I have been advised by Mr. Ortved that a collection is being taken up to send me and the Metropolitan Toronto Police have been good enough to make the first donation. They donated a subway token so I can get out to the airport.

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THE COMMISSIONER: Excellent. I am delighted with that. You have not yet decided when you are going to leave?

MR. TOBIAS: I am sure it could not be too soon.

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THE COMMISSIONER: Dr. Bain, you said you don't know what the effect would be if it were treated with heat. Where did you get the information that it was treated with heat?

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THE WITNESS: I think it says, sir, and I have a copy of the CDC report too. Dr. Lesbia Smith gave me some things back in December - let me just - and I can tell you exactly where I got it. It probably came from the preliminary trial transcript.

THE COMMISSIONER: Don't worry about it, we will track it down.



K.7

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2 THE WITNESS: I have it right here
3 from the CDC. It would take me one second or two. I
4 will tell you this afternoon.

5 THE COMMISSIONER: It probably would
6 be better this afternoon because that Atlanta Report
7 is a delicate thing.

8 THE WITNESS: It is not the Atlanta
9 Report. It was away back when they did their study
10 before they handed it in and they just put all of
11 their dig. data together in another way and they
12 were kind enough to lend it to me to see how it fit
in with my own.

13 THE COMMISSIONER: All right, thank
14 you. Perhaps if you could discover that, it would
be interesting to know.

15 Until 2:30 then? I take it there is
16 no problem, is there? How long will you be, Mr. Labow?

17 MR. LABOW: I expect to be finished
18 within about an hour.

19 THE COMMISSIONER: Mr. Shinehoft?

20 MR. SHINEHOFT: I expect to be anywhere
21 I hope up to about an hour, perhaps less. I am rather
22 reticent at giving any precise time because it depends
on the answers.

23 THE COMMISSIONER: Well, we can try

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K.8

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2 to arrange to have answers that you want but Dr. Bain
3 does not want to be here tomorrow morning, and I don't
4 blame him, so maybe we had better come back early.

5 I don't know, Mr. Roland, have you much re-examination?

6 MR. ROLAND: I probably don't have
any questions.

7

8 THE COMMISSIONER: Mr. Lamek, have you?

9 MR. LAMEK: Just a few, but it is not
going to take me very long.

10

11 THE COMMISSIONER: Let us do it at
12 2:15 then instead so that we can complete this
afternoon.

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--- Luncheon recess.

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---Upon commencing at 2:15 p.m.

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THE COMMISSIONER: Yes, Mr. Labow.

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MR. LABOW: Thank you,

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Mr. Commissioner.

6

Q. Doctor, I am going to deal
with each of the six children that we represent
because my understanding is that you have done an
independent chart review of all six, and there are
some things I would like to clarify based upon your
conclusions.

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12

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A. Excuse me. There is just one -
I was asked a question just before lunch, for that
reference. Do you wish that now?

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Q. Yes.

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A. It was about the heated
specimen.

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THE COMMISSIONER: Yes.

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THE WITNESS: I think that I got
it from the preliminary trial testimony by Mr. Cimbura,
I have written down, but it is not too clear, Volume
31, page 83. Then I have further references in
Volume 32, pages 24 and 25, and I'm not sure what
they refer to, and I may be incorrect but that is
where I got it.

I did have a question mark after the



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heating thing but I had written this right at the
very beginning.

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The second place, as I mentioned,
and she has it down here, was from Dr. Lesbia from
the CDC and they too had said that the specimen may
have been heated.

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THE COMMISSIONER: You can get a
job as a consultant to the legal profession too if
you can come up with these references as fast as that.
You do not have to limit yourself to the medical
profession.

14

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Do we happen to have that, Mr. Lamek,
do you know?

16

17

MR. LAMEK: What, sir?

18

19

THE COMMISSIONER: I know we have
the preliminary hearing, but did Mr. Cimbura give
any evidence to that effect when he was testifying
here?

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MR. LAMEK: When he was testifying
here, I don't recall. We can find that out easily.

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THE COMMISSIONER: All right,

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thank you.

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MR. LABOW: When he was testifying
here, Mr. Commissioner, he did give evidence to the
effect that he thought that it had been heated and



Bain, cr.ex.
(Labow)

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they then ran a test to determine whether that would affect anything. That is found at Volume 52, page 1657 where, in response to a question from Mr. Lamek regarding the fact that they subject a sample to heating at a given temperature to see if there was a cause for concern regarding the reliability of the results, he answered:

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"The results obtained were not significant. There was no change before and after heating which would indicate to me that this particular heating treatment may not have affected the serum to a very large extent."

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THE COMMISSIONER: All right, thank

you.

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THE WITNESS: I think my concern, and you were asking me just before lunch, too, was with regard to whether it was serum or whether it was blood because what things hinge on is that there is a tremendous amount of potassium in red cells, and if you heat them at all, the red cells membrane breaks down and lets it out. I don't know, that is the question for those clinical pharmacologists next week.

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MR. LABOW: Q. I think it has been



Bain, cr.ex.
(Labow)

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indicated to us in evidence, Doctor, that we think
that the sample was serum and we could only presume
from Dr. Taylor's general procedures that it was
from the inferior vena cava, but those are not
absolutely proven.

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First I would like to deal with
Paul Murphy, and you have all six charts beside you,
Doctor. It is Exhibit 80C.

10

A. It is okay.

11

Q. Doctor, you placed Paul Murphy
in Group 1A.

12

13

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A. Excuse me, I'm just turning
to my other work notes and I will be right there
with you. Yes, I have it now, thank you.

15

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Q. He is in Group 1A which means
according to your review of the chart you felt there
was no reason to question or have concern that his
death was other than expected or explained fully
on medical grounds.

19

A. Yes, that is true.

20

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Q. We know from hearing about
Paul Murphy that he was a very sick young man and
he had been in and out of the Hospital from infancy,
and he was about 15 years old when he died.

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A. Yes.



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Q. Now I have, courtesy of
Mr. Roland, your typed note about Paul Murphy.

3

A. Yes.

4

Q. So, as I understand it your
procedure was that you would go through the chart,
dictate out --

5

A. Just talk to myself, yes.

6

Q. Would you then reduce that to
this sheet I have or were there steps in between?

7

8

A. I think that these were what
I felt to be the significant features in the case.
Sometimes, the reason I am hedging, sometimes I did -
some of them I started out doing longhand things and
got tired of it and then summarized those and threw
them away but for the most part I read them through
and then I went back and read them through and
dictated what I felt to be the salient features.

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Q. You point out in there that

his admission at this time was due, to a lesser degree, to
facial grimacing, vomiting and funny neurological
signs.

A. Correct.

Q. Other than that, the only

thing that I take out of your discussion here is
that he had severe intractable congestive heart



AA6

failure that was unresponsive to medical therapy?

A. That is right, yes.

Q. On going through his chart, there were some things set out in that chart that I found somewhat odd, for this child. He apparently had many of the neurological symptoms of possible digoxin intoxication including confusion and irritability.

A. Those were pretty - I guess I would have to say that I did not think there was any really particular picture with digoxin and that those things, confusion and irritability, are pretty common to many neurological things, be they a stroke or head injury or menangitis or whatever.

Q. In the matter of this child, what we are obviously concerned with is congestive heart failure.

A. Yes.

Q. We are looking at this in only one of two ways. Was he killed by his congestive heart failure and his increasing problems with his heart or is this a situation where digoxin intoxication should be looked at? In this case, notwithstanding the fact that those symptoms are relatively common to other things, could you turn to page 130.

24

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Now there is a nursing note.

3

A. Yes, I have it.

4

Q. The nursing note that begins just below the very top short note and half way down they discuss the fact that he was confused and irritable many times throughout the day, disoriented as to time and place twice and that his father stated "Yelled out at me twice today and that is so unlike Paul".

10

Now with this child we have also heard from Dr. Fowler at page 6830 that he was a very pleasant child and we have heard from Dr. Rowe --

11

A. I guess what is bothering me just a little bit and the reason I am not following you as I should, I was looking at the history of the admission and why he came in.

16

Q. Yes.

17

A. Certainly there it said that he had had episodes of confusion.

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No, that was during another admission that he had had. This is on page 120.

Q. That was his previous admission in July?

A. Yes, that he had had similar things then and that now he had had increasing difficulty controlling the movements of his left arm and his left leg which is making it look like, you know, something focal going on in his head, whether a stroke or a bleed or a tumour or embolus or something and his mind seems to wander off and it says his conversation trails off. So, they were there on admission just not after he came in. This was part of the reason for coming in.

Q. No, absolutely.

A. Yes, okay, fine.

Q. And this child was on continuous digoxin diuretic treatment?

A. Digoxin and diuretics, I see, yes, probably.

Q. Now, Dr. Rowe has suggested at page 2353 in Volume 14 that this child died in ventricular fibrillation, that his death was sudden and that the suddenness of his death was consistent with a major arrhythmia. It can also be seen, and



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2 Dr. Rowe pointed out that there was persistent
3 vomiting as one of the problems here.

4 A. Yes.

5 Q. Now, my question is that based
6 upon these symptoms isn't it possible that it was the
7 digoxin that was causing the problems at this time?

8 A. Well, like, I would have to do
9 some more reading on that and I'm not trying to duck
10 the issue but I certainly have never heard of a
11 hemiplegia or a hemi one-sided weakness associated
12 with digoxin and if he came in with increasing weakness
13 on one side and confusion I would have difficulty with
14 it. When you come down to it, there are many things
15 and many agents that could cause it but in the absence
16 of something suggesting that, like levels, I would
17 not have picked it out of the air, nor did I.

18 Q. Okay. Well, are these symptoms
19 something that would be related to congestive heart
20 failure in general?

21 A. Well, I just wonder. You know,
22 I would have to go back through this whole chart
23 because I just missed it, you know, and the feeling I
24 got when I read the chart was here was a boy who had
25 had some things before, who is now inoperable and
with the notes saying we are just trying to make him



BB.3

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2 comfortable and who had developed some funny
3 neurological signs and was being managed for that
4 and suddenly died. So, you know, these things I must
5 say did not rate very high with me, that there was
6 anything else.

7 Now, you asked the question specifically
8 about congenital heart disease. Well, depending on
9 the type of things one has, sometimes you do get
10 things going on in that heart, little blood clots
11 forming and breaking off and going up to the head and
12 causing embolus which could cause a weakness on
13 one side. So, you know, I suppose those would be the
14 other things. The other things, some of those
15 conditions where the blood gets pretty blue and the
16 blood gets pretty sludgy, the same sort of thing that
17 they can get a thrombosis. So, those certainly would
18 have been the things that would have made me - that
19 obviously did make me think that there was nothing
here suggesting anything out of the way.

20 Q. Now, Dr. Freedom pointed out
21 that although - this is at Volume 31 at page 5863,
22 that although many of the symptoms put forward were
23 classic symptoms of digoxin toxicity, he felt that
24 if we interpreted - we have to interpret these
25 symptoms in the context of this child whom he knew



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2 very well. Now, my impression, Doctor, is that this
3 child was one of the children who was definitely
4 expected to die?

5 A. I don't recall that but I will
6 accept that. That was in the rating and certainly
7 would be anyway, yes.

7

8 Q. My question to you is, if these
9 are symptoms of digoxin toxicity and there is always
10 a possibility that digoxin could play a part here,
11 should the doctors have investigated that possibility
more fully?

12

13 A. Well, that is very difficult.
14 I can't, there are a lot of "ifs" in there that make
15 it very difficult for me. I really have trouble
16 with that one. It is the old story of, you know, was
17 you there, Charlie? So, the question is, faced with
18 that question myself, what would I have done? So, I
19 have a little difficulty saying what Dr. Freedom
20 said this and said that. I guess I could sit down
21 and talk to him about it but I have a little difficulty
22 passing judgment on anybody on the basis of that.

(2)

21

22 Q. My concern is that from what I
23 can understand of your evidence you were only looking
24 to see whether the doctor's reaction, reactions, based
upon the chart, whether what the doctors did in these

25



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2 cases could have been the right thing?

3 A. I was looking at it to see if
4 there would be any bells ringing. For example, you
5 know, to take something that is completely absurd, if
6 they had all these things and then somebody mentioned
7 some day somebody had a bullet, you know, well, I
8 would have questioned it but when one gets into --
9 you see, what you are faced with is that if somebody,
10 I hope not, if somebody dropped dead in this
11 particular courtroom, if it happened out of a blue
12 sky one would say, gee, that was unexpected and what-
13 have-you; secondly though, if somebody else said, well,
14 you know, he had a bad history of heart disease and
15 somebody might say, oh, well, it was probably his
16 heart and then you do a post mortem examination in
17 either case and lo and behold you do find that he
18 has had a coronary. But that doesn't say that is what
19 killed him. It may be that either he or his friend
20 at the next table when he complained of the chest pain
gave him extra strength Tylenol.

21 So, you know, it is not as easy as
22 it sounds. So, all I could do in this particular case,
23 here is a boy who has intractable heart failure who
has, for some reason or another, gone on to neuro-
logical signs that I would not think were part of dig.,

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2 maybe part of them but not a hemiplegia, I don't know
3 that I would ever have seen that. I would have to
4 look that up but it would be hard for me to think
5 about it, and then he goes on to - he has funny
6 neurological things that are progressing and suddenly
7 he dies. Well, you know, you could come to me and
8 you could say I think he died of cyanide poisoning
9 or a number of things and say would it be compatible
10 and I would have to say yes. But, you know, would I
11 have thought of it under those circumstances and I
12 would have to say no.

13

Q. So, you would not have thought
14 to investigate the digoxin possibility any further
15 than it was?

16

A. Well, I would certainly want to
17 go back through that again but based on the history
18 that I read out of a weakness on one side that had
been going on for some time, dig. toxicity wouldn't
have come to my mind.

19

Q. Right.

20

A. But I am open if somebody can
look up and find for me, or I will do it myself, that
21 digoxin toxicity has been known to cause paralysis of
22 one side then I will take those remarks back or I will
23 do it myself and take them back. But on the basis of

24

25



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2 my knowledge I would think not, sir.

3

4 Q. The next child I would like to
5 look at, Mr. Commissioner, is Barbara Gionas. It is
6 Exhibit 105.

7

8 Now, Doctor, this child also was
9 categorized as a 1A child?

10 A. Yes.

11

12 Q. Now, I would like to refer to
13 some very specific pages in the chart. I would like
14 you to turn to page 63. I am going to go through
15 some of the progress notes from that page forward.

16

A. Okay.

17

18 Q. Now, prior to this time this
19 child had had an operation but by this time she was
20 back on the wards. Now, her respirations are
21 irregular, she is feeding very poorly and from this
22 time forward she had persistent vomiting. She is
23 also quite agitated. Now, Doctor, her digoxin
24 readings were in the 1.9, 2.1 range for a couple of
25 days from this day forward for that week.

26

27 A. I am just looking at my old
28 notes there because sometimes it is hard to refer to
29 someone else's and I have made some little notes and
30 I think that is fine. So, if I seem to be blank
31 there for a minute you know I am trying to look at
32 two things.

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Q. But she seems to be becoming increasingly restless as time goes on and on the 3rd of March, and this is at page 69, Mr. Commissioner, and at page 189 in the doctor's orders. Dr. Runge appears to lower her dose of digoxin. The doctor's order at 9 a.m. on the 3rd of March seems to indicate that she will then be receiving less digoxin. Is that correct, Doctor? I mean, am I reading it correctly?

A. I have trouble with mathematics, sir. But you are looking at Paul Runge's note.

Q. Yes.

A. On the 3rd of March.

Q. Yes.

A. He has got an arrow pointing down, so, I presume that he is decreasing it, yes.

THE COMMISSIONER: This is on what page?

THE WITNESS: 189.

MR. LABOW: 189.

Q. It is in the doctor's orders.

A. I guess I haven't got the previous one to see what it was and I have trouble reading his little squiggles. What does it say, 0.008. Is that an "8"?

Q. It looks like an 8 to me.



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2 A. And then the next one was 007.

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So, that is why I am confused a little bit here
because that would seem to be an increase rather than
a decrease.

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Q. Well, at page 186 it seems to
be 0.009.

7

A. Oh, okay then, fine.

8

Q. So, one would suppose that if
they are lowering the digoxin dose they felt that the
child was receiving too much digoxin notwithstanding
for her relatively therapeutic levels?

12

A. Correct, because until a few
years ago we had to depend upon our other senses

rather than on laboratory.

14

Q. Now, Doctor, on page 381 -
actually, page 379, '80 and '81 and '82, there are
notes at the bottom of the page. Apparently Dr.
Contreras has notes at the bottom of the pages which
seem to indicate ST changes.

19

A. Did you say 379?

20

Q. 379.

21

A. Yes, thank you.

22

Q. And onwards?

23

A. Yes.

24

Q. ST changes question digoxin.

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That continues, on the 23rd of January, the 30th of January, the next date I can't read. But there seem to be indications that there are problems with the ST changes. That is in her electrocardiogram?

6

A. Yes.

7

Q. Also questioning digoxin?

8

A. Correct.

9

Q. As a problem with this child?

10

A. Dr. Contreras is certainly

11

questioning it. I think the only thing there that

12

one should look at is that he doesn't say it is

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digoxin, that he is questioning that it could be

14

because I think the point that we have made

15

previously is that there is no electrocardiographic

16

pattern that is diagnostic. I have brought some

17

reprints here today that Mr. Olah asked for last day

18

from Dr. Smith at Harvard and it made these points

19

that there was no picture that was diagnostic, that

20

it was consistent with but not diagnostic of them.

21

Whether Dr. Contreras is heading there, I don't know,

22

but he put a question mark beside all of them.

Q. Well, Doctor, could you then

turn to page 73.

23

A. 73?

24

Q. 73 and 74. There is a note from

25



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2 Dr. Kobayashi - actually, two notes. Now, this is
3 on the 7th of March?

4 A. Yes.

5 Q. And Dr. Kobayashi says even
6 though the last level is recorded at 1.9 he still
7 plans to hold the next digoxin dose and the first of
his three impressions is digoxin toxicity?

8 A. Yes, I see that.

9 Q. On the next page.

10 A. Page?

11 Q. Page 74.

12 A. Right.

13 Q. Another note from Dr. Kobayashi,
14 he again puts down Impression: digoxin toxicity and
15 plans to hold the digoxin and digoxin is apparently
16 held. Now, Doctor, the child then dies two days
17 later, less than two days later because she dies at
18 1 o'clock in the morning. In your review of this
19 chart didn't this strike you as somewhat odd, these
20 questions about digoxin toxicity by many of the
21 doctors, by at least three of the doctors, or two,
22 Dr. Contreras, Dr. Kobayashi.

23

24

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C/DM/ak

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2 A. Well, I am not exactly sure
3 what it is you are saying. If somebody questions
4 it, then one looks at that, yes, but you have a dig.
5 level that is not consistent with what they are saying.
6 They have an ECG that they are not stating straight-
7 forward to be that it is due to that. The fact they
8 questioned it, did a level, found the level all
9 right and reduced the dose, you know, I don't know
10 what more I can say, or question. They to my mind,
11 the reason they didn't go further I would suspect is
12 that they took the appropriate steps and did the
appropriate things.

13 Q. So the point is that notwithstanding
14 the questions about digoxin, because they
15 withheld the digoxin, did a level, that was all they
should have done and that was fine.

16 A. I don't think there is really
17 any more than one can do unless one wanted to be
18 heroic and treat it as digoxin toxicity, which there
19 is, you know, no intimation of that at that particular
time. So you know, I can't say, I don't think anyone
20 would have done anything different than that, I
21 certainly would not have.

22 Q. Doctor, in this kind of
23 situation where the residents seem to indicate that
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this might be digoxin toxicity, would you expect one
3 of the staff cardiologists to look into it?

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this might be digoxin toxicity, would you expect one
of the staff cardiologists to look into it?

A. Oh, I would think, they make

rounds every day on the wards. I would think that
certainly a staff person came along and Dr. Kobayashi
along the line, whether he, Dr. Kobayashi was a
resident from Pediatrics, he wasn't a cardiologist,
and so he would be a first, I don't know if he was
a first year resident in Pediatrics only at that time
getting a one month rotation on Cardiology. Likely
the chain of command would be maybe to a Fellow, or
it may be because they all make work rounds twice a
week at least that the staff and all of the people
are there. They would have debated the question as
to - with the ECG with the levels, with the history,
debated as to whether this was the likely thing and
taken appropriate action, but they don't necessarily
write that down all the time and you depend on some-
body else to paraphrase what you have said and some-
times that is not done.

Q. Doctor, I do have your one

page typed note.

A. Yes.

Q. About this child. I understand
that you were going through these charts and trying



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to look at them case by case without considering
the global situation.

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A. That is true, trying to but ---

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Q. I still cannot understand why

5

these impressions of digoxin toxicity were not
something that you paid somewhat more attention to.

6

A. You see in any given hospital-

7

there is a report from Boston, I don't know whether
it is in my report or not, that 20 per cent of their
patients on digoxin have toxicity, you know, of
varying degrees, so this is a very common thing.

8

So when I see it on a Cardiology Ward and they take
appropriate steps and they do appropriate levels,
you know, I know what happens and so I think that ---

9

THE COMMISSIONER: I got the
impression somehow that there is no other remedy
for digoxin toxicity other than to hold the digoxin.

10

THE WITNESS: Well, those are the
main things, sir. You know, if you really felt some-
body was toxic there are these new FAB, and it is
not a laundry detergent, it is one of those, I always
forget, fragment antigen bindings.

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THE COMMISSIONER: How new is that?

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THE WITNESS: That is very new, we
can't get it in Canada except by special dispensation.

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If someone were concerned, if they were concerned about them, they might give some potassium, that is one thing that seems to be helpful if the potassium is low. That's about it, but certainly at these levels of 1 and 2, or even 3, you know that are considered therapeutic levels one would not do more than that.

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THE COMMISSIONER: Raise the potassium level but that would lower the digoxin level.

12

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THE WITNESS: It interferes with binding and binding sites, it might put the level in the blood a little higher, and we are into that again.

15

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THE COMMISSIONER: Yes, that's right. The more potassium the looser the binding will be, is that right?

17

18

THE WITNESS: They compete for it, so whoever gets there the strongest does it.

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THE COMMISSIONER: I just wanted to just sort of deal with Mr. Labow's question. Was there anything in 1980-1981, any drug, other than potassium which would be given that might have had any effect?

THE WITNESS: No, sir.

THE COMMISSIONER: I don't remember



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any instance of potassium actually having been given
for that purpose.

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MR. LABOW: I don't recall that
either.

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THE WITNESS: I think Dr. Fowler
did in his paper, you know, but that is a different
kettle of fish.

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MR. LABOW: Dr. Fowler did refer
to giving potassium ---

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THE WITNESS: And dialyzing
perhaps.

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MR. LABOW: Mr. Commissioner, I
think it's Exhibit 156 deals with an article where
these FAB fragments and treatments like that is
referred to.

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THE COMMISSIONER: These are since
the epidemic period?

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MR. LABOW: That is correct.

Q. Doctor, my only further

question about Barbara Gionas is, isn't it possible
that she was ultra-sensitive to digoxin notwithstanding
the low levels?

22

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24

A. That has been described, yes.

Q. And Doctor, the next three

children that you deal with were all in Group 1B.

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The first one I would like to discuss is Philip
Turner.

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A. I seem to be having trouble here, I am sorry, but I have got my own notes, so it is all right. I have my own notes on that one because - maybe it is there, maybe it is there and I cannot see it for looking. Oh, I am sorry, there it is on the very bottom, thank you very much. I will just refer to my other notes first.

Q. Now, Doctor, Philip Turner -

my concern is focused upon the last three days of his life, or just under three days, after he had returned from ICU to the wards. Now, Dr. Rowe did tell us that, at page 1820, and I am not sure but I think that is Volume 12.

THE COMMISSIONER: Volume 11.

MR. LABOW: Volume 11, thank you, sir.

Q. That returning him to the ward from the ICU would suggest that he was not at an immediate risk of death, would you agree with that?

A. That is the usual situation of sending him back unless there is well, they should not be doing it, I would agree with that, even if he weren't that close they shouldn't be doing it



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unless they were really pushed down there with over-
occupation.

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Q. Doctor, this child had a very
strange situation with his digoxin, well not
terribly strange, in that it was held quite often;
and Dr. Izukawa testified at Volume 59, that it was
held generally because of transient EKG problems
and they had some concern with this child's rhythm;
"transient rhythm disturbances", page 2391.

15

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Dr. Izukawa's arrest note with this child indicates
that - and this is at page 52 of the Hospital records,
that the cardiac status appeared controlled.

A. I am having trouble with these
numbers, 52 you said?

Q. Yes, 52.

A. I have got it now.

Q. Now, Doctor, if you will turn
back to page 49, there is a note from Dr. Soulioti
regarding digoxin, it is right in the middle of the
page, discussing episodes of sinus bradycardia,
therefore digoxin not always given.

21

22

THE COMMISSIONER: What page is this,
49?

23

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25

MR. LABOW: This is page 49,
Mr. Commissioner, half way down the page.



CC8

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THE COMMISSIONER: Oh, I see, yes.

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MR. LABOW: Q. Now, Doctor, once more in this case we have a situation where there seems to be some concern about digoxin from at least one doctor, but that doesn't seem to be a concern of yours, in your discussion of this chart.

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A. Well, as I say I am likely being not a cardiologist when I look at these things, but if they have a concern, and then the concern is either not backed up by levels, or ECG changes, or any suggestion of panic on their part to do something about it, then I have to assume that as I said where 20 per cent of patients do show dig. toxicity that it is within that realm. Because there are a lot of kiddies who have these ups and downs and they do it from day to day, they will respond in a different way to the same dose in the same patient. So that happens and it happens in 20 per cent of cases according to the Boston group. So no, it didn't ring any bells that I would have done anything differently than they did.

Q. Doctor, I have already referred to the fact that Dr. Izukawa testified that digoxin was held because of these rhythm disturbances?

A. Yes.



CC9

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2 Q. At page 1836 of his testimony,
3 Dr. Rowe says digoxin was held because of potassium
4 instability. Are these two things ---

5 A. Yes, they are interrelated
6 because we know that digoxin when it is high can
7 put potassium up, but we also know now from what
8 Dr. Schwartz from Cincinnati said last week and
9 Dr. Spielberg, that the potassium can also put the
10 dig. up. The problem you get into is that both of
11 those things have a bad effect on the heart, and
12 potassium is based on the serum level and it
13 probably can kill you a lot quicker than digoxin,
so they are very interrelated, yes.

14 We know, for example, that if the
15 potassium is low that the same dose of dig. may have
16 very toxic effects.

17 Q. Doctor, you point out on page
18 7 of your report that you put this child in this
19 category only because of unexplained seizures and
you wondered if something had been missed in diagnosis.

20 A. Yes, this is where I was
21 getting into these seizure things that I didn't
22 relate to digoxin, and so, was there something that
23 was missed. As you pointed out a moment ago, I was
24 in the hands of the cardiologists, and I suppose
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2 I lean to the fact, towards the fact that they know
3 what they are doing cardiology-wise, so that was
4 my concern. Sometimes patients on a cardiology ward,
5 or somewhere else who has something else, one wonders
6 did he have something else, and so that is what was
7 bothering me.

8 Q. Doctor, the only thing that I
9 don't understand about this is my understanding of
10 your testimony was that you put children into this
11 category when there were questions or concerns
expressed in the chart, by other people?

12 A. Correct, yes.

13 Q. Can you point out to me where
14 in the chart someone was concerned about these
15 unexplained seizures?

16 A. Oh, I'm sorry, but you know,
17 it was not always that way. I think that is clear
18 somewhere along the line I think - I even put some -
anyway that is what my feeling was.

19 Q. So for children in this category
20 it wasn't always things actually expressed by other
21 people but things you might pick out of the chart?

22 THE COMMISSIONER: Some questions
23 were raised was the way you worded it.

24 THE WITNESS: That is the way I

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cc11 worded it.

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THE COMMISSIONER: And that leaves
you a fair amount of manoeuvring because it could
be raised by anyone?

4

THE WITNESS: Yes, somewhere along
the line and I remember writing in in one of them
the question was raised by me, for example. Most
of them were people - where people had concerns,
yes.

5

6

THE COMMISSIONER: Can you tell us
just what the question was that was raised?

7

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THE WITNESS: Oh, many of those
were, for example, Dr. So and So wrote to the other
doctor and said I don't think this baby should have
died when it did. Then when I had the autopsy, I
think there were two or three of those that we
related to Dr. Freedom, one to Dr. Rose, and yet
when we saw the autopsies which I had the benefit of,
they didn't when they wrote the letters, that some
of those concerns dissipated.

THE COMMISSIONER: Was Turner in any
of the meetings in September, was he one of the
ones ---

MR. LABOW: Turner was discussed in
the first meeting.



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THE COMMISSIONER: It might well have
been Dr. Bain's question then, I don't know.

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THE WITNESS: I honestly don't
remember.

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MR. LABOW: Q. My question was,
what was it, because I didn't find any concerns
specifically expressed in the chart.

9

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THE COMMISSIONER: I take it you
knew about those meetings?

11

THE WITNESS: Oh yes, the M and M
conferences?

12

THE COMMISSIONER: Yes.

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THE WITNESS: Yes, I had those
bits of information, and as I say there was still
things I was trying to keep out of my mind but they
were there.

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THE COMMISSIONER: If we want to

play detective, Mr. Labow, we can always see if those other babies who were in the September meetings, are they also included in 1B or some of them may be in 1A?

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MR. LABOW: It is not something I know offhand, Mr. Commissioner.

8

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Q. I would like to go on to Matthew Lutes. Doctor, Matthew Lutes was admitted to the Hospital on the 12th of November and died in the Hospital just under five days later, very early in the morning on the 17th.

12

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Now, you point out in your review of this child that the baby had several risk factors and you list them and your concern here is that he might have had surgery earlier.

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A. I think that is probably what the Commissioner maybe has referred to, one of the things I probably gleaned from the M and M reports because I don't think normally I would say that. I am not competent to say that. So I've taken it from somebody else's concern that he should have been.

22

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THE COMMISSIONER: By the time he died, it would have been after the M and M reports strictly. There was a meeting with the surgeons in



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January. It may have been discussed in that. Does
anyone remember?

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MR. LABOW: I did not recall the
Lutes child being discussed.

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THE COMMISSIONER: Does anyone know?
Do we know what that exhibit was?

8

THE WITNESS: I can tell you in a
minute, sir. I don't see it, in a quick look.

9

THE COMMISSIONER: It is Exhibit 64 -

10

63, 64 or 65. I do not know whether --

11

THE WITNESS: No, I do not have it
in the M and M's.

13

MR. LAMEK: He died after the date
of the second M and M conferences.

14

THE COMMISSIONER: Yes, but before the
January.

16

MR. LAMEK: There were no children
discussed in January. I seem to recall that he was
one of the 15 so-called unexpected deaths.

19

THE COMMISSIONER: Yes, but he was
not one of the ones mentioned by Dr. Trusler and I
don't know whether he was added to that list by
Dr. Rowe. He is not even on the list; I don't see
him.

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THE WITNESS: I don't know whether,



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as I say - I think - it is another patient I am
thinking of, whether --

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THE COMMISSIONER: In the appendix
to the minutes there is no reference to him that

5

I can see. He died in November?

6

THE WITNESS: 17th of November,
admitted on the 12th.

7

THE COMMISSIONER: I don't know
whether Mr. Labow is going to ask it, but can you
remember what the question was that brought him into
10
11 LB?

12

THE WITNESS: I said that someone
probably suggested or I thought, I'm not sure which,
that he should have been operated on a little earlier.
That was the question. I think that is what you
stated, yes.

13

THE COMMISSIONER: Yes.

14

MR. LABOW: Q. You don't recall
where you got that information?

15

A. No, I don't.

16

Q. Doctor, this child was another
child who exhibited low levels or therapeutic
digoxin levels but Dr. Rowe testified at Volume 14,
at page 2437, although the level was only 2.1 it
may have been too high for this child. Is that

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3 something that you were aware of when you reviewed
the charts?

4

5 A. If it is not written in the
chart, no.

6

Q. It is not written in the charts.

7

A. No.

8

9 Q. And it was put to Dr. Rowe
that this child was suffering from persistent
10 vomiting although the digoxin levels were only in
the area of 2.

11

A. Yes.

12

13 Q. He commented that it might have
14 too high for this child. Doctor, was your knowledge
of the symptoms of digoxin intoxication more than
15 the average, Doctor, when you did these chart reviews?
16 In other words, did you do extra reading to see what
the symptoms were?

17

18 A. Yes, I did, and I would like
19 to think that it was, but on the other hand so many
20 of these things, the problem is, early on, the main
things are vomiting. When you get into things, if
21 there is any dizziness or anything like that, the
22 baby can't tell you. So many of the things you read
23 about in the book just don't apply. The usual things
24 in many drug things are vomiting, and I doubt that

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you would find much more than that.

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Q. Doctor, we have also heard
that lethargy --

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A. Anybody who is sick is going
to be lethargic and lying around. They are all so
non-specific that if you were to say to me are they
symptoms of dig. poisoning I could say yes but I
could say they were symptoms of infection or just
about anything.

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Q. So it is not something that
you would be able to pinpoint. None of the doctors
have been able to do that.

A. Thank you, that is good.

Q. The non-specificity of the
symptoms is one of its problems --

A. It is.

Q. -- of finding digoxin intoxica-
tion in any of these children.

A. I think if you read in that
article by Smith that I circulated today for
Mr. Olah, I think there are two statements in there,
if I'm not mistaken. One that there is no electro-
cardiographic dig. picture that is diagnostic and
I think also that he says there is no clinical
picture that is absolutely diagnostic. I have to



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check that second one but that is my recollection
now. I think I probably have the additional data,
in my summary. If it was in that article it will
be in the additional data in my summary.

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check that second one but that is my recollection
now. I think I probably have the additional data,
in my summary. If it was in that article it will
be in the additional data in my summary.

MS. THOMSON: Mr. Commissioner, as
Dr. Bain is referring to this paper perhaps it is
appropriate to enter it as an exhibit at this time.

THE COMMISSIONER: Has it not come
out --

THE WITNESS: I just brought it
today.

MS. THOMSON: He only gave it to
us shortly after the lunch hour.

THE COMMISSIONER: Oh I see. I beg
your pardon. Then let us have it. I thought it
was the one we had this morning.

MS. THOMSON: Just to check with
you, Doctor, this is the paper you are referring to?

THE WITNESS: By Thomas Smith,
Boston, yes, it is, thank you.

THE COMMISSIONER: That will be
Exhibit No. 250.

MS. THOMSON: Thank you,
Mr. Commissioner.



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Document entitled:

---EXHIBIT NO. 250:

Digitalis Toxicity - Epidemiology
and Clinical Use of Serum
Concentration Measurement.

MR. OLAH: I would be grateful if,
since it is being produced at my request, that
perhaps over the recess I could have a copy.

THE COMMISSIONER: Unless you are
going to refer to it, Mr. Labow, we could just give
it now.

MS. THOMSON: We have three copies,
Mr. Commissioner. I will be very happy to give
Mr. Olah a copy so he can pursue it.

THE COMMISSIONER: All right. We
will have them done at the break, then.

MR. LABOW: Q. Doctor, once more
with this child at page 81 in the Doctor's orders --

A. Hold just for one second. My
own curiosity has got me. I thought that I should
be able to find it. I thought when I put the dig.
data at the end in the appendix, I have one there
that says "Additional Dig. Data" and yet I cannot
find the one that says - maybe this is it - No. 9
on page 49. Yes. I said "It is important to
realize..." and I was getting a lot of this from
Dr. Smith, this one I'm handing out, it might save



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some people a lot of reading:

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"It is important to realize that there are no unequivocal ECG features which distinguish digitalis toxic rhythm from those due to intrinsic cardiac disease, although some combinations are suggested. Similarly, there is no clinical digitalis toxic rhythm disturbance that does not occur as a result of heart disease alone in patients who have never received digitalis. The symptoms of digitalis and intoxication are also common to many other conditions."

So it was just that.

Q. So in your review of these

records --

MR. OLAH: Sorry, could we just

have the page reference on that?

THE WITNESS: I'm sorry, it is

page 49 of my report, No. 9.

The next case, I'm sorry, yes.

MR. LABOW: Q. Doctor, all I was

going to ask you was this is the situation where the cardiologists were concerned that even --



Bain, cr.ex.
(Labow)

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A. I'm sorry, which patient?

3

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Q. We are still dealing with

Matthew Lutes.

5

6

A. I'm sorry, I thought you were -

sorry, and your question was?

7

8

9

Q. This is a situation where

Dr. Rowe has testified that we may have been dealing with a child where even though the digoxin level was therapeutic it was too high for this child.

10

11

12

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15

Now, I know you are not here to

second guess these doctors but this child then died just over a day later. Do you think it would have been prudent to look into that as a possible cause of death, notwithstanding the non-specificity of the symptoms?

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A. But you see I don't know what

they could have done that would be different because if they have levels that were associated with the symptoms they showed and those levels were normal, they would have no reason to think that his death, if it were due to that, would be associated with high levels because our very premise is that it was undue patient sensitivity rather than overdose - overdose by amount, quantitative overdose. So I don't think that would have made - I know it would



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not have made a difference because the people were
not geared up to do anything differently at that time
but even at the present time - you didn't see me
shrug there. I shrugged - I don't know.

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not have made a difference because the people were
not geared up to do anything differently at that time
but even at the present time - you didn't see me
shrub there. I shrugged - I don't know.

Q. Doctor, in your review that

I have, the typed review, you point out that there
was some question as to whether this child had
received digoxin in Sault Ste. Marie or whether he
had only received it at the Hospital and you seem
to indicate that he had not received digoxin in
Sault Ste. Marie?

A. When I went back the first

time I thought he had and the second time the thing
I wrote down is no, so I assume he did not have it in
Sault Ste. Marie.

Q. Do you know where you got that

information?

A. Well, I just assumed - no, I

think it is written there as a matter of fact, I
would have to go back and look at things - or it was
just left open, that he was on dig. and I assume
because he was in failure in Sault Ste. Marie that
he started on it there. When I went back and checked
on it I found that he had not started on it there.
So this is a patient who was felt to be incurable and



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2 they were sending home the next morning without
3 treatment. Is that not the patient?

4 Q. Not that I know of, Doctor.

5 Is that your impression as to what was happening with
6 this child?

7 A. Well, I'm going to have to
8 check on that. There was one and I thought it was
9 the Soo baby that was going to go back home. I
would have to look that up and see.

10 Q. If you find out that that
11 is the case I would appreciate you informing your
12 counsel to tell the Commission.

13 A. Certainly.

14 Q. If you turn to Real Gosselin,
Exhibit 72.

15 A. Yes.

16

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BB/cr

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2 Q. Now, Doctor, this child
3 came in from Winnipeg?

4 A. Yes.

5 Q. And because he had received
6 such a high digitalizing dose of digoxin in Winnipeg
7 a digoxin level was ordered that came back at either
8 3.9 or 3.7, depending on where you look in the chart.

9 Now, this child, Doctor, did not and
10 was not in the hospital very long because he died
within about a day. You put him in Category 1B?

11 A. Yes.

12 Q. Did you only put him in that
13 category due to the prostaglandin?

14 A. I think that is what I have
written and I guess that's why I did it or whether
15 it was a combination of seemingly not responding to
16 prostaglandin and being intractable but what I have
17 written at the time, and I guess that is what I have
18 to go by is what I have said and I think that is
19 what I have said.

20 Q. Now, you testified on
21 Thursday that you spoke to Dr. Freedom about his
concern and the letter from Dr. Cumming.

22 A. Yes. And I said I would
23 bring that and I brought it today and I believe I

24
25



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2 gave it at noon - did I give it to you, Mr. Lamek?

2
3 MR. LAMEK: No, you did not. I was
4 going to ask you for it later.

5
6 THE WITNESS: It is probably there
then, Ian. I brought it and gave it over to Mary at
noon.

7
8 MR. ROLAND: Well, we will locate it
in due course.

9
10 THE WITNESS: There are two copies
there, the letter from Dr. Cumming to Dr. Freedom.

11
12 MR. LABOW: Q. Now, did you seek out
Dr. Freedom when you spoke to him about this?

13
14 A. No. Actually, that came
about about Dr. Cumming more recently, you know,
when I put down about prostaglandin. As I have
said before, I did not do any investigation. I
recommended that an outside group come in. It's
not my job to do it. I would gladly have but it
might have been - well, whatever. In any case
I felt that a group outside the Hospital for Sick
Children should do it and a group of experts not
of amateurs. So, that information went to the CDC.

21
22 MR. ROLAND: I have just located the
letter from Dr. Gordon R. Cumming on the letterhead
23 of The Children's Hospital in Winnipeg, addressed

24

25



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2 to Dr. Freedom. Is that the letter, Dr. Bain?

3 THE WITNESS: It is, thank you.

4 MR. ROLAND: It is dated January 6th,
5 1981. We will mark that as the next exhibit.

6 THE COMMISSIONER: 251.

7 ---EXHIBIT NO. 251: Letter dated January 6, 1981
from Dr. Gordon R. Cumming to
Dr. Freedom.

8 MR. LABOW: Q. Now, Doctor, when
9 you referred to speaking to Dr. Freedom in July
10 did you mean this July, July, 1983?

11 A. This episode of Dr.
12 Cumming's letter was certainly, if I put there 15th
13 of July I have written it in my rough notes and I
14 think you have a copy of my rough notes, so, it must
15 have been the 15th of July that I spoke to him,
16 1983.

17 Q. '83?

18 A. Yes, I am sorry.

19 Q. Now, Doctor, in your review
20 of this chart we have almost the same situation that
21 I was referring to with the previous children. At
22 page 44 of the Hospital record it indicates that Dr.
23 Stephen was called to see this child because of
24 apnea and bradycardia and the child was lethargic.
25 There is a note from Dr. Stephen on page 44.



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A. I'm sorry, the page number
again?

4

Q. 44.

5

A. This is patient?

6

Q. The patient is Real Gosselin.

7

A. Page.

8

Q. 44.

9

A. Thank you. Yes, thank you.

Q. Now, Dr. Stephen's note
is that, it is found right in the middle of the page.

11

A. Yes, I have that.

12

Q. "Will try lasix - if fails
to improve with it discuss digoxin
issue".

14

Now, the child then continues to suffer
from persistent vomiting and dies a short time
later but this is of course at 7:00 p.m. on the 17th
of December and the child dies early on the morning
of the 18th of December. Did the digoxin situation
regarding this child in your review of the Hospital
record give you any concern?

20

A. I am just trying to find
my own notes here. Well, all I can say to that is
that I thought the digoxin issue had been resolved
by the fact that they did not give him any more

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digoxin.

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Q. So, the fact that the order
was that digoxin be held meant that you weren't
concerned that digoxin played a part in his death?

5

6

A. Well, what I said you see
was that that:

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9

"In 3 there was a question of an
adverse reaction to drugs (2) and
a toxic level of digoxin in 1",

right down at the bottom of my page 8 of my report:

"...and a toxic level of digoxin

level in 1 (although this had
occurred the day before his death and
had been discussed with the parents)."

Is that it? Now, I'm sorry, that was a mistake.

15

16

Q. I thought that was Baby
McKeil.

17

18

A. That is McKeil, you are
correct. Let me just go back.

19

20

Q. This is the child that ---

21

22

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A. Yes, I just skipped a para-
graph there. No, all I can say is that digoxin being
withheld and the level of 3.9, although very high
had been tolerated that it should have been on the
downswing. I guess we know currently that that may



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2 not be so but that is the only evidence that has
3 come out in about the last month that levels can
4 go up after the drug is stopped but at that particular
5 point in time and at '82 when I did my review that
6 was not known.

6

7 Q. Now, we have also heard at
8 length about the possibility of medication errors
9 aside from intentional administration. This child
10 exhibited many of the common symptoms, as non
11 specific as they are, of digoxin intoxication but
12 aside from holding, if no one seemed to concerned
13 to test for it afterwards.

12

13 A. I don't know what their
14 aim of testing usually is. As I say, we test it
15 at 8 o'clock in the morning which is sort of the
16 routine testing time, is it 8 or 9 in the morning,
17 and that is what the Hospital routine is and one does
18 not normally, unless it was a poisoning or something
19 and you have to call in the laboratory to test at
20 other times. So that that is the standard times of
21 doing it. So, whether they had planned to the next
22 day or not, I don't recall.

21

22 Q. Well, we don't know whether
23 they planned to?

23

24 A. No, but relative sort of like

25



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2 dig. tomorrow or something like that, I don't recall
3 that.

7

4 Q. No, I don't recall that
5 anywhere in the chart?

6

A. No. I just was looking
7 in the orders and trying to keep three places here and
I am running out of hands.

8

Q. Doctor, in Dr. Stephen's
9 discharge report, that is found on page 22 of the
10 Hospital record.

11

A. Yes.

12

Q. He indicates that the child
13 did well until 2:25 and then there was a prolonged
episode of bradycardia that was resolved spontaneously
14 and then another one five minutes later. It seems
15 from the Hospital record itself that this death was
16 very sudden. Did the suddenness of this death raise
17 any questions to you?

18

A. Well, I thought perhaps we
19 weren't going to get into that business of sudden
because it is a very difficult thing to deal with
20 what one person means by sudden. All I can say is
what I said a day or so ago that babies get sick
21 quickly, they die quickly, with appropriate treatment
22 they sometimes get better quickly. So that it is
23

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2 never a surprise to me when the bottom drops out
3 and I think many of these babies had many risk
4 factors. This baby certainly had lungs that were
5 not performing their job very well. I have forgotten
6 the details but almost certainly was acidotic and
7 things and there just comes a point where they have
8 no more reserve and they go plunk. So, no, that
mode of dying would not necessarily bother me.

9 Q. Fine. Then, Doctor, the

10 last child I would like to look at is Kristin Inwood,
11 Doctor, page 20 of your report.

12 A. Okay, we are right with
13 you but just one moment while I get my pages marked
here. I'm sorry, which page was it?

14 Q. 20.

15 A. 20, thank you.

16 Q. You refer to an ECG that
17 showed a prolonged PR interval and a depression of
18 the ST segments. Do you know where in the Hospital
19 record you found that information?

20 A. Just one second, I seem to
be having some problems.

21 THE COMMISSIONER: What are you reading
22 from?

23 MR. LABOW: I am reading from the

24

25



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2 fourth line down of page 20 of the Bain Report.

3

An ECG showed a prolonged PR interval.

4

THE COMMISSIONER: Yes, I see, all
right.

5

THE WITNESS: Well, I would hope that
it is in that chart. Just a minute, I might be
able to find an easier way to it here. Well, in some
further rough notes I have - I have it on the
admission of that here, so, it should be there.
It should be in a progress note following along the
admission.

9

MR. LABOW: Q. The progress notes
being on page 61.

11

A. . . . I am sorry for this, not
having that at my fingertips. I've got two or three
things like Dr. Cameron's letter from the East
General and I am just trying to see in which of those,
and I had written at the top of one of my pages here
Scarborough and whether that was done out there or
whether that was just where the baby was from but
it will be here somewhere I assure.

20

MR. LABOW: Mr. Commissioner, we
could take our break now. This is the last child
I have to deal with.

23

THE COMMISSIONER: We could, yes,

24

25



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2 there is no question we could take it now. I
3 was hoping though to, if I can put it elegantly,
4 to dispose of you so that we then will be able to
5 be reasonably sure. How much longer do you expect
6 to be?

7 MR. LABOW: I only expect to be
8 another five minutes.

9 THE COMMISSIONER: Yes. Well, Mr.
10 Shinehoft has threatened us with an hour. Perhaps
11 he has relented. Have you?

12 MR. SHINEHOFT: My problem Mr.
13 Commissioner is this. The longer I take to commence
14 my cross-examination the more questions I find I
15 have to ask the witness.

16 THE COMMISSIONER: I would have thought
17 it was the other way around. That is an insult to
18 everybody that has gone before.

19 MR. SHINEHOFT: I don't find that,
20 Mr. Commissioner. I'm not sure that I can be
21 finished today. I will certainly try to be.

22 THE COMMISSIONER: Well, there is
23 no question that you can be finished today because
24 we will just stay until you are finished, there is
25 that possibility.

26 MR. SHINEHOFT: Yes.

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THE COMMISSIONER: I wonder if perhaps we will just take five minutes and then we will come right back out, I think we will have time for a coffee.

THE WITNESS: I will stay here, I don't want any coffee, sir, and if that is important I will find it.

---Short recess.



DM. jc
FF

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2 --- Upon resuming:

11 THE WITNESS: Yes.

12 THE COMMISSIONER: Or, whatever time
you can arrive, we won't start until you come.

THE WITNESS: Thank you.

THE COMMISSIONER: And we will proceed tomorrow morning.

16 MR. SHINEHOFT: Thank you, Mr.
17 Commissioner.

18 MR. LABOW: Mr. Commissioner, we did
19 find that reference, the doctor found it at page 55
20 in the discharge report.

THE COMMISSIONER: 55.

MR. LABOW: Yes. In the paragraph just above "hospital course" there is a reference to the ECG, and that is the reference that the doctor was referring to.

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FF. 2

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THE COMMISSIONER: All right, thank
you.

4

MR. LABOW: Q. Doctor, in your report
at page 20, your last sentence was:

6

"There was no other morphological
evidence of congenital rubella
syndrome."

8

A. Yes, I am sorry.

9

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Q. Now, is the only morphological
evidence possibly referable to that besides the size
of the head?

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A. No, the heart lesion per se
is one of the common things in the epidemic some
years ago, that was one of the common things that was
a feature of rubella syndrome. It varies from
everything to, like a lot of children in later life
appeared with deafness as a result of it. Then there
is the odd baby who at birth is, has defects in many
systems and is desperately ill. The large spleen,
for example, could go in with that because that
sometimes is seen in more severe rubella syndrome,
but per se it may also have been related to the heart
failure so I would not hang my hat on that.

Q. Because at page 21 in the final
autopsy report, the final sentence is:



FF. 3

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"No morphological evidence of congenital rubella syndrome was found either grossly or on microscopic examination."

A. I would quarrel with them. I mean, yes I think that is so but if they exclude the heart and the head.

THE COMMISSIONER: Just a minute, you said page 21 of the final autopsy report?

MR. LABOW: Yes, it is page 21.

THE COMMISSIONER: Mine doesn't go up that high.

MR. LABOW: It is page 21 of the Hospital record, that is page 2 of the final autopsy report.

THE COMMISSIONER: Yes.

MR. LABOW: Q. So you would quarrel with that conclusion?

A. Well, yes. As I say congenital heart disease and the question of the brain business, one would have to keep them in mind when you had that level. This will be a baby at risk down the line and one would want to know about things like deafness and all that the baby should be monitored for.

THE COMMISSIONER: Would they not be



FF. 4

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2 right that there would not be no ---

3 THE WITNESS: Yes, nothing they could
4 see.

5 THE COMMISSIONER: Nothing they could
6 see other than what they already knew about, the
7 state of the heart?

8 THE WITNESS: That is right, the
9 heart and the measurement of the head, yes, they
should have mentioned that.

10 THE COMMISSIONER: Rubella is German
11 measles?

12 THE WITNESS: German measles, that is
13 correct.

14 THE COMMISSIONER: And it is
notoriously dangerous for the mother?

15 THE WITNESS: It is a bad thing to
16 have. As you know, it is one of the things, I had
17 better not say this because I don't want to get into
18 any arguments, where they might have a therapeutic
19 abortion with reasonable evidence that the mother
20 did in fact have rubella in pregnancy, or a very
realistic chance of exposure.

21 THE COMMISSIONER: Would they not
ordinarily know if the mother had had German measles?

22 THE WITNESS: She did, in fact, you

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see they did some levels on her, that is why I mentioned it and her level did go up. I have spoken to our virologist about it and the levels of change, they couldn't say it was and they couldn't say it wasn't, but they are pretty appreciable, they went up to one 5-12 I believe, upper teeter, so ---

THE COMMISSIONER: The symptoms are not obvious?

THE WITNESS: As far as the mother herself is concerned if she had it you know, you get a little rash and it can be anything from prickly heat, it is one of those vague rashes and hard to diagnose. Usually it is on the basis of some children coming home from school with it and having that diagnosis.

MR. LABOW: Q. Doctor, at page 19 of your report, in your summary, the second last sentence you point out:

"There is no question but this child was at extremely high risk of dying and in the manner reported."

A. I am sorry, did you say 19 or 20?

Q. 19. In the summary that is in that square.

A. Oh yes, I am sorry, yes.

Q. You considered that this child was:



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FF. 6

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2 " ... this child was at extremely
3 high risk of dying ... ",

4 but at page 37 of your report in Drs. Rowe and Freedman's
5 analysis, they labelled this child C-3, which means
6 moderately compromised cardiac status and prognosis
that is fair with therapy?

A. Well, all I can say in that is looking over the notes from the East General Hospital I don't think I would have been as optimistic as they were. Whether they were basing it on the structural nature of the heart lesion which is one of the things they seem to be doing, but it seems to me that despite treatment at the East General she became increasingly edematous and more and more heart failure. Then she got into, and I am reading my notes I am sorry if I am not looking at you there. Well, all I can say was that she was increasingly tach apneic I think and I have these other more prolonged notes here, so I guess I can't, you know, that is what I thought on the basis of this.

Q. Now Doctor, in this case, you
gave evidence at page 3436 that you raised the
question of the initial bursts of tachycardia at the
time of the arrest?

23 A. I am sorry, where was this?



FF. 7

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2 Q. This is in your evidence.

3 A. Yes, okay.

4 Q. And you spoke to Dr. Rowe about it?

5 A. Yes.

6 Q. Did you ask the clinicians or

7 residents if there were any other noticeable

8 characteristics around that time, to see if there was

9 anything else you could add to this problem?

10 A. Most of the interns and

11 residents would not have been there, you see, by the

12 time I did my review, they move along in their

13 training, but no, I did not, Dr. Rowe was the only

14 one I spoke to.

15 Q. If that was something that you

16 wondered about, should that have been something that

17 the cardiologists, the staff cardiologists looked at

18 at the time?

19 A. You know, I suspect that they

20 probably did.

21 Q. There is no indication in the

22 Hospital record?

23 A. No, I am sure it would have

24 come to their attention just as it did to mine. I

25 think as Dr. Rowe said, although it is unusual, again

we come down to those, when you get down to an



FF. 8

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2 individual case your statistics go out the window.

3

4 Doctor, you seem to put a lot
5 of weight on the autopsy report with this child. You
6 make references to many of the autopsy findings, and
7 I should point out to you that the doctors who did
8 the autopsy were not aware that this child had
9 received a mistaken dose of digoxin?

10

A. Yes.

11

12 Q. They were also probably not
13 aware that the ECG's that were previously referred to
14 showed signs of possible digoxin toxicity. Dr. Taylor
15 testified at Volume 44, page 8851, that he would have
16 included digoxin intoxication as a possible clinical
17 diagnosis had he known those two things?

18

19 A. All I can say about - I think
20 I can speak to both of them insofar as the ECG,
21 Dr. Schaffer had not looked at the date on the note
22 he wrote, but it is probably, let us see, he may have
23 done it right away and they usually go down to the
24 post mortem. He did it on March 17th, it looks like
25 dictated, but they usually go to the post mortem and
so I can't tell you if it is not in the body of the
notes. He may not have told them. Insofar as the
other business of the error, again I don't think
that you can keep me honest in this one, I don't



FF.9

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2 think that is in the body of the chart, where I found
3 that was from the trial transcript.

4

Q. There was an incident report
5 filed later?

6

A. Yes, filed later but I don't
7 think it is in the body of -- incident reports
8 apparently don't stay with the chart, they go some-
9 where else. It was in the other, I believe in the
preliminary hearing, and that is where I got it from.

10

Q. Doctor, you discussed the very
11 high levels of calcium and potassium in this child.

12

A. Yes, and they still bother me.

13

Q. Now, is it possible that upon
14 being given a very large dose of digoxin that the
15 digoxin would interfere and displace potassium and
16 calcium that are already bound to the cells and
17 forced it back into the blood, and give that high
18 a reading as opposed to the reverse when potassium
tends to do that to digoxin?

19

A. Well, I think either way one
20 has to keep in mind that either thing can happen. It
21 seems to me likely that since calcium is used very
22 frequently in resuscitation, that almost certainly
23 that happened during the resuscitation. In the past
24 few days because of this case and the interest; and

25



FF.10

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2 there was another baby, I have forgotten whether it
3 was Miller or who it was, that had a fairly high
4 calcium level, and I believe someone, maybe it was
5 Mr. Lamek, asked me about the effects of calcium. I
6 have had our calcium expert working on it the whole
7 weekend, poor fellow, and he was flabbergasted by
8 that level of 34 and still he keeps phoning me every
9 few hours with some more data. There is no question
10 that it interferes with the electrical induction,
11 'what-have-you, in the heart, and no question that it
by itself probably could cause a cardiac arrest.

12 THE COMMISSIONER: The question I
think was, could it also unbind the digoxin?

13 THE WITNESS: I don't know about
14 calcium. The main things that unbind potassium, I
15 don't know whether calcium competes, that is something
16 I am not sure the way it acts, but that will be
17 something that the clinical pharmacologists will
have to be asked, potassium yes, calcium I don't know.

18 MR. LABOW: Q. Doctor, we have heard
19 a lot about the specimens where we found the level
20 of 491 nanograms --

21 A. Yes.

22 Q. -- in Kristin Inwood?

23 A. Yes.

24

25



FF.11

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2 Q. And as we have related to you
3 many of the reservations that you have were, or I
4 think should have been satisfied to some extent;
5 Mr. Cimbura did a test regarding the heating. We
6 have indications that this was serum and not blood;
7 we also have an indication that this was probably
drawn from the inferior vena cava.

8 A. I don't know where I had it
9 from the sagittal sinus. I must have got that from
10 the preliminary hearing, because, you know - it is
11 the place where you get blood. If you would just
12 hold for a moment and I will see what the CDC said
about it and this is the old CDC so I am not
13 releasing any information, Mr. Commissioner.

14 CDC says specimen from the sagittal
15 sinus taken at autopsy. Specimen in refrigerator
16 since autopsy, some question that specimen had been
17 heated. It says, it does say serum rather than blood,
18 whether my thoughts about blood came from the
19 preliminary hearing or not, that would certainly make
20 a difference, yes. But I do think that this is
21 something, this is the crux of the case and this is
what the clinical pharmacologists must answer.

22 Q. Doctor, can you tell me what
23 you are reading from exactly?

24

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FF.12

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A. Oh, I spoke before on the line, I compiled a list of digoxin, all the data on digoxin from the preliminary hearing. And then when the CDC came in somewhere in December, I think it was, I happened to be down talking to them in the office at the Hospital, and I think it was either Dr. Lesbia Smith or Dr. Helen Wallace who said, well, they had compiled their data somewhat differently. I said, could I have a copy, and they said, yes, and that is what I am referring to. All it is is a compilation of where the specimens were obtained, there is no, it is just a factual compilation of data.

13

Q. Do you know who compiled it?

14

A. Well, the CDC group whoever it was.

15

Q. So you don't know who in the CDC group but someone in the group who compiled it?

17

A. No.

18

Q. And they referred to that sample as coming from the sagittal sinus?

20

A. That is what it says here, yes. I had that down myself, before, so whether I got that from the preliminary hearing I would have to go back and look.

23

Q. Doctor, my only other question

24

25



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regarding this child is, if the 491 level is a valid
level, is a level that is not excessive due to the
heating or where it was from, would you conclude that
this child died from digoxin intoxication?

6

A. No, I can't conclude that
because of - this is precisely again what the
specialists must say, because as I mentioned the other
day in evidence the level in the blood apparently
has no biological activities.

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2 We have often seen levels of 100
3 or more firm, on the upswing, if you take it within
4 a half an hour of giving a dose intravenously.
5 I do not know what the limits are on that and some-
6 body possibly does know but I think what has to be
7 determined by the clinical pharmacologists
8 is how does that relate to tissue levels and how
9 do tissue levels relate to cause of death. I think
that is the meat of the whole thing.

10 Q. So even if this level was
11 valid, it would not help you in your conclusions
12 in any way?

13 A. It would certainly bother
14 me, as it has, and I keep trying to track it down and
15 find out other things about it but, as I say, what
16 I have heard secondhand is that the digoxin in the
17 blood per se has no biological activity so it has
18 to relate, it has to be related to those other
19 levels. I think that is clearly what clinical
pharmacologists must do.

20 MR. LABOW: Thank you, Doctor. I
have no further questions.

21 THE COMMISSIONER: Mr. Shinehoft.

22 CROSS-EXAMINATION BY MR. SHINEHOFT:

23 Q. Dr. Bain, my name is Jack

24
25



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2 Shinehoft and I represent the parents of Kevin
3 Pacsai. I would like to ask you some questions with
4 regard to that child. Do you have his chart before
5 you? It is Exhibit 106.

6

A. I don't believe I do.

7

MR. SHINEHOFT: Mr. Commissioner,
I will also be referring to the evidence previously
given by Dr. Bain and that is contained in Volume
60, I believe.

10

THE COMMISSIONER: Yes, all right.

11

MR. SHINEHOFT: Q. Doctor, you
indicated to Mr. Lamek in your evidence in chief,
and I am going to be reading verbatim what you said
to him at page 3443, Volume 60, and it is line 14
where you say:

15

"I think we should look at Kevin
Pacsai in total. I won't have my
facts absolutely correct but I will
be glad to alter them a bit."

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Is there anything, as far as your
report or the evidence that you have given so far
in relation to Kevin Pacsai that you would like to
alter or change or felt that you have stated in
error?

A. No, nothing at all. I think



1

2 I was just thinking the other day, because I was
3 talking off the top of my head, that I may not have
4 stated to Mr. Lamek that I was not reporting verbatim;
5 but insofar as my report is concerned it is nothing
6 that I wish to change.

7

Q. I assume, Doctor, and I
believe you have given some evidence to this fact
that when you did your chart review you firstly read
the chart and then you made some notes by means of
a dictaphone and then you also made some written
memoranda. Is that correct?

11

A. That is correct, and
insofar as Kevin Pacsai is concerned I think that I
was probably back through it two or three times so -
there are handwritten things that probably no one
could decipher.

16

Q. Then you compiled the
report, and I presume that the information that you
put in the report in your summary were the clinical
data that you felt was relevant as far as the child's
chart is concerned. Would that be right, Doctor?

20

A. That is correct.

21

Q. Do you have your summary in
front of you?

23

A. Yes, I do.

24

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Q. I believe it is page 27.

3

A. Yes.

4

Q. Towards the latter part

5

of the summary you state: It should be noted that
Kevin's birth weight was 3860 grams and his weight
on admission to HSC at one month of age was 4.1 kg
and so, in addition, he had a marked failure to
thrive which is also characteristic of adrenal
insufficiency in this age group.

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I would be interested, Doctor, in the
base and the information that you used to compile
this information and to derive the conclusion that
you came to.

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A. I have a couple of sheets
from Nelson's text book if you wish to enter them
in evidence. When he was born I think his weight
was 3.86. Well, 3.86 for boys at birth is in the
90th percentile of weight, that is only 10 per cent
of children are there although the average weight
there is 7½ pounds. He was in the 90th percentile.
When he succumbed his weight was 4.1 which put him
below the 50th percentile and insofar as the 90th
percentile was concerned he should have been 5.14.
That represents a difference of about 25 per cent.

Now, I don't know whether the good



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Lord meant him to be a great big baby but all I can say is if he was following along the channel he was born in then he has failure to thrive. If one takes it on the average then he does not, but, nevertheless, this baby was in the 90th percentile, he did fall to below the 50th percentile, so if I could -- that is Nelson's text book on paediatrics which is a kind of paediatrician's bible. I have circled them there.

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Q. There are three facts I

would like to confront you with or give you, Doctor, and I would like your reaction to it.

First of all it is my understanding

that the child gained approximately 25 grams per day.

15

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A. I have not figured things

out. I think there was a time that he lost and a time that he gained.

18

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Q. If I were to tell you that

those calculations were done and the calculations

would appear to indicate that the child gained 25

grams per day ---

A. After he started to gain,

perhaps.

Q. Would you disagree with me?



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A. No, I cannot because I've
not gone through that exercise but nevertheless there
had to be - he was in Hospital for a couple of weeks,
was it, before, with a history of ---

5

6

THE COMMISSIONER: The overall gain
is 240 grams in a month apparently.

7

MR. SHINEHOFT: I don't believe -
it was not a month. I believe it was ---

9

10

THE WITNESS: Three and a half weeks,
something like that.

11

MR. SHINEHOFT: Yes.

12

13

Q. I have had the calculations
done and it is my understanding from the calculations
that have been done on my behalf that this child
gained 25 grams per day.

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A. I think what I am trying
to say is if he is born in the 90th percentile
and if he gained at a rate which would keep him in
that percentile, and people usually do follow their
percentile, then he should have gained more than that.
All I'm saying is he slipped channels and he slipped
down, so whether the gain you state is for an
average baby of which he was not, he was in the
90th percentile.

Q.

So you cannot disagree with



Bain, cr.ex.
(Shinehoft)

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2 me when I say to you that ---

3 A. No, no.

4 Q. Secondly, if you did a
5 growth chart for this child, which has been done for
6 me, it would appear that he would have an absolutely
7 normal growth chart. Would you be in a position to
comment on that?

8 A. Not in weight because that
9 is what I presented to you. In height, I am not
10 certain about height. I don't know that I did height
11 or that we have height, but that still would not
bother me because it is weight that we are talking
12 about.

13 Q. I see. Have you had a
14 chance to look at the post mortem of this baby.
15 That is Exhibit 106-B.

16 A. I believe I did, Mr.
17 Shinehoft.

18 Q. Do you have that in front
19 of you, Doctor?

20 A. I don't think - but maybe.

21 THE COMMISSIONER: I think you will
find it right in the back of ---

22 THE WITNESS: -- of the history, thank
23 you.

24

25



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2 Q. Do you have it, Doctor?

8

3 A. Yes, I do.

4 Q. If you look at the first
5 page, Doctor, you will see part three deals with
6 external examination.

7 A. Yes.

8 Q. And you will see beside
9 pupils it states "Dilated and equal". Have you
10 found that?

11 A. I have not, but I would
12 certainly hope they would be because that goes with
13 death ---

14 Q. Beside it it says "How
15 nourished", do you see those words?

16 A. I am sorry, what page are
17 you on?

18 Q. The very first page.

19 A. And you were saying which?

20 Q. Part three dealing with
21 external examination.

22 A. Yes, I have that.

23 Q. Do you see where it states
24 "How nourished". Perhaps I can show it to you.

25 A. Just get me started here
and then I will be able to ---



9

1
2 THE COMMISSIONER: I think you are
3 on the wrong page.

4

THE WITNESS: I think I am.

5

Q. Do you see the part, Doctor,
6 where it says "How nourished". It is part three.

7

A. I have it, yes.

8

Q. What does it say beside
that, Doctor?

9

A. It says "Length, 56
10 centimetres, weight, 41"-- is that what you were
11 looking at?

12

Q. That is right. And the
13 third line says "How nourished".

14

A. How nourished, "well".

15

Q. This was done by the
pathologist who has given evidence previously and
16 his evidence was that he looked at the baby, the
17 baby appeared to be well nourished. Do you have any
18 comment about that?

19

A. Not really because the
thing that happens in adrenal insufficiency, and
20 I'd like to say something in a moment, but the
thing that happens is water loss primarily and this
21 baby had been on intravenous ever since he came in
22 to St. Joseph's Hospital. So any water deficits, any
23

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25



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10 2 dehydration would have been corrected. So that
 3 doesn't bother me too much.

4 Q. So you are saying that a
5 child can be well nourished but have a marked failure
6 to thrive. Those are not incompatible?

7 A. When you come down to weight
8 and into water loss and when the business started as
9 to whether it was adrenal insufficiency. I think my
10 point, Mr. Shinehoft that I tried to make and would
11 make is that is that - perhaps I'm out of order and
12 I shouldn't say it - my concern is that this baby
13 in Hamilton had a condition characterized, amongst
14 other things, by a high potassium. He had, when
15 he left Hamilton, another beginning rise in
16 potassium. He had associated with his arrest here a
17 high potassium so my point of view is that whatever
18 he had terminally may well have been what he had
19 initially, that there are several things in the
20 differential diagnosis, one of which is adrenal
21 insufficiency, and to my mind is as good or better
22 than any of the others, equally capable of being
23 proved as any of the others because none of the
24 others were proved either.

25 So all I am saying is that what he
 had in Hamilton he may well have had again.



1

2 Q. I understand that.

3

A. Thank you.

4

Q. I will get into that entire

5

area, but I just want to go one step at a time,

6

Doctor, if I might.

7

A. Certainly.

8

Q. I would like to review again
the evidence that you gave in chief to Mr. Lamek
at page 3444, line 3. You indicate he was "not feeding
well, he was constipated, they made a little note
that he was voiding well."

9

10

11

A. Yes.

12

Q. "I am not sure why they made
that little note. That starts to ring a little bell
in my head when we come to the adrenal."

13

14

15

Now, is the fact that the child was
not drinking but voiding relevant as far as other
considerations are concerned?

16

17

18

A. I think the main thing
is when a baby is not eating and drinking, and I
guess they drink more than they eat, they tend not
to void. However, if they have transient adrenal
insufficiency amongst other things, and I will tell
you the other things, but if they have an adrenal
insufficiency they cannot hold their water so when

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2 you hear somebody coming in and saying a baby
3 isn't eating or a baby is dehydrated and yet lying
4 in a pool of urine that should make you think because
5 the usual is the other way around. Constipation,
6 although in adrenal insufficiency they do get bouts
7 of diarrhea, very often because there does not seem
8 to be enough water to go around, the stools are
9 often constipated, or said to be.

10 Q. Would you not expect,
11 Doctor, that if a child has a problem whereby they
12 were not drinking but voiding, that they would be
13 losing weight?

14 A. This was the point I was
15 trying to make, and I did not do the day by day,
16 but it comes down to the fact that these babies very
17 often are able to manage their own affairs even
18 though they have a condition that we know they may
19 be born with and there are other causes of adrenal
20 insufficiency. Many of them don't present until
21 later because either you have good parents who are
22 trying to feed them every two hours or whatever and
23 they keep ahead of the situation. So you cannot
24 say, you cannot generalize. Then what happens is
25 in these, just as in any other form of adrenal
insufficiency something causes a crisis and the bottom



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2 can drop out in a matter of hours.

13

3 Q. But, Doctor, isn't body
4 weight an excellent way of measuring fluid balance?

5

6 A. It certainly is, and what
7 I am saying is that his body weight when he came in
at the three weeks had dropped 25 per cent relatively
from his birth weight.

8

9 Q. But in absolute terms he
had been gaining 25 grams per day?

10

11 A. I don't know for how many
days because that would be unusual, if you just
12 divided it by things from birth because all babies
lose some in that first few days of life. All I
13 can say is in the overall he lost proportionately.
14 If we went another month and he was down to the 10th
15 percentile, what do we say then.

16

17 Q. But the fact is that this
baby was not dehydrated, was he?

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Bain, cr.ex.
(Shinehoft)

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A. I don't know, nobody commented on whether or not the baby was dehydrated when it was in the state of shock there, they did not say yes and they did not say no and they started an intravenous immediately.

Q. But isn't that the reason why they would make such a note to be indicative of the fact that this baby was not becoming dehydrated?

A. Well, I don't know because there are people who can judge dehydration and there are people who somehow cannot, and I am not saying that in a whatever manner but whatever it was there is no comment as to whether the baby is hydrated or dehydrated at the beginning, that I could find.

Q. I see. You discuss the question of this transient adrenal insufficiency.

A. Yes.

Q. And you addressed your mind to that question in your report, Doctor, and you said that there is not much written in the literature about it I believe, isn't that what you said?

A. That is correct. It is referred to in every book only and everybody says that there is very little written and the real problem is if it is transient they get over it and they don't die and



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therefore you can't prove the diagnosis except for,
as I say, another case in the literature that
appeared at seven or eight years of age got into
serious trouble then, having managed for six, seven
years on its own.

7

Q. Did you examine the literature,
Doctor, to ascertain what was written about this
condition?

9

A. I did that, yes.

10

11

Q. And what did you find in the
literature, Doctor?

12

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A. Well, I couldn't find anything
in the literature, so, I went back to my own reprint
file and the library wasn't able to find anything
for me, so, I found one by a Colonel Geppert from
the United States Army back in 1950 and I guess that
is the one that had been sticking in my mind most of
the time. He was reviewing various causes of
adrenal insufficiency and he included these amongst
them with the usual caveat that not much is said and
then in a standard textbook, which I unfortunately
did not write the name of, it is a fairly recent one
and I can get that for you, and again they say
transient - I will quote you from the textbook and
I have these if people wish them: "Transient Adrenal



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HH3

2

Insufficiency of the Newborn" has been described.

3

Some cases are probably due to hypoaldosteronism,

4

and that is just the salt and water retaining hormone
deficiency.

5

6

Others may, after an apparent cure,

7

develop into a chronic hypoadrenocorticism and I

8

have that one case which is a French author and I

9

have not I must confess, I'm not bilingual and I

10

have not translated it and I have sort of guessed

11

but this is the one that I will refer to and I

12

have that if anybody wishes.

13

Then, as I said, we do see the

14

situations where mother has been treated with some-

15

thing or other that suppresses both her and the baby's

16

adrenal glands and we know that cortisone is the

17

big offender in that.

18

Q. I see.

19

A. I suppose there are other

20

things in the world that they get that could do the

21

same.

22

Q. So, that is the references

23

that you had made in contemplation and in preparation

24

of your report, is that correct?

25

A. That is correct, except, as I

say, I kept searching for the one I knew I had and



Bain, cr.ex.
(Shinehoft)

HH4

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found it in my own reprint file.

3

4

Q. Well, Doctor, have you ever
heard of MEDLARS?

5

6

A. I think that is a search
apparatus.

7

8

Q. That is the computerized
Literature Retrieval Services of the National
Library of Medicine.

9

10

A. Yes, our library uses that
I believe.

11

12

Q. And you have heard of it, have
you not, Doctor?

13

14

A. I have heard those words. I
couldn't have told you what that meant, or those
letters.

15

16

Q. Well, let me explain a bit
about it to you.

17

A. Yes.

18

19

20

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25

Q. This is based at the National
Library of Medicine in Bethesda, Maryland. MEDLARS

is available through a nation NLM network of centres
at more than 1,300 universities, medical schools,
hospitals, government agencies and commercial
organizations. MEDLARS contains some 4,500,000
references to journal articles and books in the



Bain, cr.ex.
(Shinehoft)

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2

Health Sciences published after 1965.

3

4

Now, would this data base or
information be available to you?

5

6

THE COMMISSIONER: It is available
to his library he said.

7

8

MR.SHINEHOFT: Q. To the library?
A. I think our library works
with the University of Toronto Library and I think
it is a thing that anyone writing papers always does
a search, yes.

11

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Q. I see. Well, Doctor, I have
undertaken a search of the literature since 1956 in
regards to transient adrenal insufficiency and I
can tell you that the only reference that I can
come up with out of the 4,500,000 references is
a reference in 1956 I believe in the Turkish Journal
of Pediatrics - I'm sorry, it is in July of 1971.
So, would you agree with me, Doctor, that the
published literature on this particular syndrome is
pretty rare indeed?

A. Well, perhaps they should have
looked maybe in my reprint file, I don't know. Mine
is 1950, as I said, but I will read you what he says
in that and he was talking about hypofunction of
the adrenal cortex during early life and he went on



Bain, cr.ex.
(Shinehoft)

HH6

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to say:

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"In the American literature the most prominent exponent of the concept that temporary hypoadrenia may occur has been Jaudon. Some 5,000 infants delivered at this Hospital during the three years following Jaudon's first report have been closely watched for evidence of this syndrome. In our experience about 1,000 newborn infants demonstrates evidence of adrenal insufficiency sufficient to warrant the emperical administration of cortical extracts."

Q. He was talking about adrenal insufficiency?

A. That's what I'm talking about.

Q. He wasn't talking about transient adrenal insufficiency?

A. Well, it's the same, that's what he said that the words were - where are we, blah, blah, blah:

"In the American literature the most prominent exponent of the concept that temporary hypoadrendia..."



Bain, cr.ex.
(Shinehoft)

HH7

1

2 And temporary is transient.

3

Q. Right.

4

5 A. I would think he was meaning,

6 yes. So, I have that reprint if you should wish it.

7

Q. I would like to see it and I

8 will get the references after today, Doctor.

9

A. Right.

10

Q. I would point out in fairness
11 to these people, they have computerized everything
12 after 1956.

13

14 A. Yes. As I say, mine goes back
15 before that. I don't like to admit that but it does
16 and the standard textbooks still refer to the
17 condition. I don't think you will pick up a
18 standard textbook of pediatrics that it is not in
19 there, or standard textbook of endocrinology does
20 not list it and they likely go on to say it is very
21 unusual and how do you prove it.

22

Q. You would agree with me that
23 it is a very unusual condition?

24

A. It certainly is.

25

Q. In your clinical experience
have you ever seen that before?

26

A. Oh, I think I have. I have
27 certainly seen transient adrenal insufficiency. I

28

29



Bain, cr.ex.
(Shinehoft)

1
2 have seen things - if you're asking me to present or
3 pull out a certain patient with it and all of those
4 things I might have some difficulties but I have
5 certainly seen it in - there are some serious
6 infections, babies get meningococcal infection that
7 usually gives you a big hemorrhage in the adrenal and
8 very often they die but every once in a while one
9 of those gets better and later on they aren't able
10 to show that hemorrhage. So, I suspect that the
11 condition, it's called Waterhouse Fridericksen
12 Syndrome, and I will spell that for you later.

13 THE COMMISSIONER: How does death
14 operate, Doctor, if it is transient?

15 THE WITNESS: Oh, in the transient
16 ones, no, the transient ones they get over it but
17 what I was saying, in this type of thing with
18 infection, if they get over it then it must have
19 been transient again and there are some of these
20 patients with meningococcal infection who have
recovered and therefore their adrenals probably have
recovered.

21 THE COMMISSIONER: Yes, but having
22 recovered then how does death operate. I mean, what
23 happened to Kevin Pacsai?

24 THE WITNESS: Oh, my concern about
25



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(Shinehoft)

1
2 Kevin Pacsai, Mr. Commissioner, is that what he had
3 early on was a high potassium. High potassium is
4 a very dangerous thing in people. His potassium came
5 back to normal after they treated him with - they
6 gave him some intravenous fluids and sodium chloride
7 and sodium and potassium acting in sort of a whatever
8 way and they rehydrated him and for whatever reason
9 his potassium came back to normal, in fact, came down
10 to levels around 3, as I recall over at McMaster
Medical Centre.

11 Then on the day he was being transferred
12 here it was 5.8. When he went into his arrest the
13 first thing that Dr. Costigan found was a level, I
believe it was ---

14 MR. SHINEHOFT: Q. 7.7.

15 A. 7.7 and the second one was
16 9 point something. Our people on the kidney floor
17 who do dialysis think of dialysis at a level of 5.5.
18 I don't push a panic button that early but the books
19 will tell you that it is a pediatric medical emergency
20 once you are ---

21 THE COMMISSIONER: Adrenal insufficiency
is to account for a high potassium?

22 THE WITNESS: That's right.

23 THE COMMISSIONER: Because it is

24

25



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2

HH10 the potassium level that killed him.

3

4 THE WITNESS: Well, that is what
5 I have said, although, in my conclusion I also said
6 that dig. had to be ruled out in my conclusions, but
7 what has to be, as far as I'm concerned, that is why
8 I said to Mr. Shinehoft I don't care what the original
9 thing is in Hamilton it was something characterized
10 by a high potassium on two occasions and his death
11 here was characterized by a high potassium on the
12 third occasion. So, I think that one cannot throw
13 all of that out the window, that's my point.

14

15 MR. SHINEHOFT: Q. So, you are
16 postulating, Doctor, that this baby had this
17 transient adrenal insufficiency at St. Joseph's
18 Hospital in Hamilton; he may have?

19

A. Yes. I put he had something
there that had a high potassium.

20

Q. And that something may be
transient adrenal insufficiency?

21

A. Correct.

22

23

Q. Which he somehow got again in
Toronto?

24

A. Yes.

25

Q. I believe, to use your phrase,
lightning did strike twice.



1

2

Hill
3 A. I don't think I said that, but
4 maybe, that's all right if I said it.

5

MR. ROLAND: He didn't say it with
respect to this instance.

6

7

THE COMMISSIONER: Well, it is not
terribly original.

8

9

THE WITNESS: Oh, I'm sorry, no,
thank you. I mean in my evidence, yes.

10

MR. SHINEHOFT: Q. He died - I have
the reference if you want it.

11

12

A. I could well have said that,
certainly.

13

14

THE COMMISSIONER: I have heard the
expression before.

15

16

MR. SHINEHOFT: It is at page 3466,
line 14 if you want the reference.

17

THE WITNESS: I confess,
Mr. Shinehoft.

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MR. SHINEHOFT: Q. It is late in
the day, Mr. Commissioner. What you are saying, if
I understand you correctly, Doctor, is that this
baby didn't die of transient adrenal insufficiency,
what that did would, that may have triggered the
potassium mechanisms which caused the elevation in
this baby's potassium levels, is that right?



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HH12 A. Well, I'm saying that this baby originally had a high potassium and was darn near dead. He later on had a potassium that was going up again, he finally had a high potassium and was dead. So, I am just saying that one cannot ignore the first episode at St. Joseph's Hospital and all I ;am saying, I don't care, you know, we could argue all day about adrenal insufficiency and you wouldn't want to do that and I wouldn't want to do that but there are other things that were thought about. The doctor at St. Joseph's, his top diagnosis was sepsis or infection which could have hurt the adrenal and then he wasn't able to prove that because he couldn't draw anything on culture but I said before, and I think I said in that context that things like Legionnaire's and AIDS we think that one isn't an infection, probably the other one is, we don't know how to grow them yet, so, we can't grow everything.

I think someone else said that it was paroxysmal auricular tachycardia. Dr. Malcolmson said that yet he can't, you know, there is no way to prove that because the original heart rate was 160 and even the heart rates they had later of 260, both Nelsons textbook of pediatrics and our



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(Shinehoft)

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HH13 own cardiologists who are the experts in that field
3 say, well, gee, babies that age don't usually get
4 in trouble until they get to a level of 300.

5

Q. All right.

6

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A. And kidney, if I could just
round the darn thing out, with the business of
kidney can do this and the baby at autopsy did have
some trouble with one kidney but we know he can get
along without a kidney. His BUN was up, it came to
normal.

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So, all I am saying is he had a
high potassium. My diagnosis is probably as good
as anybody else's. I couldn't swear on even one
Bible that that is what he had because there is no
way to prove it.

26

Q. The point I'm trying to make,
Doctor, is that transient adrenal insufficiency did
kill Kevin Pacsai.

27

28

29

30

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32

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35

A. Well, you know, you may be
able to say that but transient adrenal insufficiency
can cause a high potassium.

Q. No, no. Doctor, please. It
may be a question of semantics but you have said in
your evidence and I will give you the reference that
transient adrenal insufficiency did not kill the



1

2

baby because the baby gets better.

3

4

A. Oh, okay, okay, if they get over the situation and are well afterwards then you call it transient.

6

7

Q. That is my point exactly, Doctor.

8

A. Oh.

9

Q. You don't call it transient unless they get over it and they get better.

10

11

A. Well, okay, we have some semantics functioning there, yes.

12

13

Q. So, again, would it not be ---
A. I can take the transient off it and say adrenal insufficiency.

15

16

Q. No, but you didn't say that, Doctor.

17

A. Well, medicine changes from minute to minute, Mr. Shinehoft.

18

19

Q. Well, Doctor, you know, we are not here for an up to minute report. I mean, I think you have made a conclusion, you have come to a conclusion, I asked you right at the beginning of your evidence, Doctor.

23

24

A. I didn't come to any such conclusion, I said he may well have had.

25



Bain, cr.ex.
(Shinehoft)

HH15

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Q. No, I understand that but I

believe you are saying to us now, and correct me if I'm wrong, it is the potassium that you are concerned about. It is the potassium that may have caused this baby's death not the transient adrenal insufficiency which may have been the trigger mechanism for the potassium.

A. Well, it is.

Q. Well, you are postulating that.

A. Not postulating, that is the feature of adrenal insufficiency.

Q. So is digoxin intoxication a feature of high potassium?

A. Oh, yes, but he didn't have digoxin, Mr. Shinehoft, before he came to St. Joseph's in Hamilton.

Q. No, that's true, that's true, something brought him there.

A. Yes.

Q. Perhaps we could at this point talk about the question of potassium. I understand, Doctor, that potassium is an intra-cellular fluid, is that correct?

A. It's an electrolyte, yes, by and large intra-cellular.



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HH16

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Q. To the extent that if you

have for example 100 nanomoles per litre of potassium intra-cellular you would have something like 4.5 nanomoles extra-cellular, is that correct?

A. Well, gee, don't ask me that sort of detail, somebody has obviously sat down and worked that kind of thing out and I have difficulties with it. I could just say that about 95 per cent of potassium is inside the cell.

Q. That's right.

A. And the rest is in the serum.

So, a very small leak from cell to serum can make an astronomical change in serum and kill you quickly.



DM.jc

II

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Q. I appreciate that, so it is

somewhere in between, it is around 90 to 95 per cent?

A. Yes, intracellular.

Q. Intracellular?

A. Yes.

THE COMMISSIONER: That is dangerous in the blood and the digoxin is dangerous in the tissue?

THE WITNESS: That is right, sir.

MR. SHINEHOFT: Q. And potassium is

basically excreted from the body in one of three ways, is it not, Doctor; either through the kidneys, which excretes about 95 per cent of all the potassium; or through the bowels; or through the sweat glands which constitute maybe up to 5 per cent of the excretion process of potassium, is that correct?

A. I think that is probably correct.

You know, fluid and electrolytes is something you have got to be working with all the time, Mr. Shinehoft, and I have given up working with them for a few years so I may well make errors in those things. There was a time when I knew about them, but not now.

Q. But you must admit, Doctor, that this whole business of potassium as it relates to Kevin Pacsai is of critical importance in ascertaining what really happened?



II.2

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A. It certainly is, yes, and that
was my point, I think.

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Q. And would you agree that
changes in the plasma potassium may reflect one of
two things, either the loss or gain of total body
potassium; or the shifting of potassium from inside
the cell to outside the cell, those are basically ---
A. I think that is a basic premise,
that is correct, yes. Either you lose it or you add
to it, or you shift it back and forth, or you do -
like, you know, there are over 50 causes right off
the top of my head that I could give you of high
potassium and probably an equal number of low
potassium and they are both equally dangerous.

14

15

16

Q. What you had with this baby
is he had a high potassium at McMaster, and they get
that down to about 5.8.

17

18

A. That was the second, yes, at
McMaster when he was on his way over here.

19

20

Q. When he was on his way over?

A. Yes.

21

22

Q. And would you agree with me,
Doctor, that the normal range of potassium is 3.5 to
5.5?

23

24

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A. I don't know, I would go - as



II.3

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I said a moment ago, the renal dialysis people they dialyse at a level of 5.5, but I would say 3-1/2 to 5, I am happy with that, 3.5 to 5.

5

6

7

Q. Would you agree with me that there are some textbooks that say 3.5 to 5.5 is the normal range?

8

9

A. Yes, I think that there probably are some textbooks that say that, I get a little nervous over 5.

10

11

Q. Would you agree with me that 5.8 isn't that much greater than 5.5?

12

13

A. No, it represented an increase from what they had on the previous one of 3-point-something.

14

15

Q. They had it 3.7.

16

17

18

19

A. Yes.

Q. And they seemed to have taken care of his potassium problem at Mc, would you agree with that, prior to his admittance at the Sick Children's Hospital?

20

21

A. As I say at the end of his term at Mc, it was on its way up again in transit, was it not?

22

23

24

25

Q. No, I don't believe so.

A. I thought that 5.8 was the



II.4

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2 morning he was transferred here?

3

4 levels at McMaster, and on March 11th, at 17.45, I
5 believe it was 5.8 was the last level at Mc.

6

A. Yes.

7

Q. And 3.9 was the first level
at the HFC?

8

A. Sure.

9

Q. Which meant his level came down?

10

A. Probably.

11

Q. From the time he left McMaster
12 to the time that he came here, and you have given
13 some evidence previously, Doctor, about the fluids
14 in his body and the fact that when you put an IV on
him that sort of tends to regulate the blood gases?

15

A. Yes, I don't know blood gases
necessarily, but certainly with sodium it does affect
potassium distribution.

18

19

Q. And I believe you read in the
chart --

20

A. Forces it back into the cell.

21

Q. I can read you the reference,
but you said his IV was blocked when he came to the --

22

23

A. I don't know how long, I don't
know how long that was, because, you know, when you

24

25



II.5

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2 say he arrived; that was up on the ward, my under-
3 standing, and I don't know if you have ever been in
4 a hospital, sometimes it takes two or three hours
5 to get in.

5

Q. So they restarted it?

6

A. They restarted it back up on
7 the ward.

8

Q. Nevertheless, his level came
9 down from Hamilton to Toronto?

10

A. That is right. Then it had
11 come down from St. Joseph's, in McMaster before it
12 went back up again, yes.

13

Q. So his level was down at
14 McMaster, and down on his arrival at the HFSC even
15 though his IV was plugged?

16

A. As I say, I don't know how
17 long it had been plugged, that is all I am saying.

18

Q. But it was plugged?

19

A. That is what I think I read in
20 the notes and you probably read it too.

21

Q. And then his level goes from
22 3.7 to 7.7, and then up to 9-point-something?

23

A. Yes.

24

Q. I believe, Doctor, that you
25 can calculate the increased levels in your, potassium



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4008

II.6

1

2 in your body, if you had absolutely no kidney
3 function at all by using the baby's weight and using
4 certain volumes, is that not correct, Doctor?

5 A. I have no idea, you are way
6 ahead of me.

7 THE COMMISSIONER: You said it went
8 from 3.9, it went up to 9 and then down to 7.7, isn't
9 that it?

10 MR. SHINEHOFT: Yes.

11 Q. After I believe Dr. Costigan
12 started therapy on the child, the three things that
13 he did?

14 A. I thought one was a false
15 reading and it was just a recheck.

16 Q. One was slightly hemolyzed.

17 A. I don't think they had a level
18 of potassium after he started treatment with his
19 Kayexalate, and things to get it down, after
20 Dr. Costigan, I don't think there is.

21 Q. Maybe, maybe not, I am not sure
22 but his level does go from 3.7, which is what his
23 level is on admission to the Hospital?

24 A. Yes.

25 Q. And it goes up to somewhere to
26 7 and then to 9, correct, Doctor?



III.7

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A. As I say, my understanding was 9.9 and the 7.7 were - they may have been an hour apart, there is something. But, okay, I will accept what you say.

MR. LAMEK: I might point out that my recollection is that the 9-point-something level was on the hemolyzed sample.

THE WITNESS: That is right, and they repeated it

MR. LAMEK: The level was then 7-point-something.

THE COMMISSIONER: 7.7 I believe.

MR. LAMEK: And the unhemolyzed sample that was the highest, that was the highest level recorded.

MR. SHINEHOFT: I am appreciative to my friend.

THE COMMISSIONER: You mean the readings that are found there?

MR. SHINEHOFT: That is page 81 of the record, Mr. Commissioner.

THE COMMISSIONER: Yes, oh, I see, C-1 slight hemolysis.

MR. SHINEHOFT: Q. So, Doctor, you don't disagree from the lab reports that his level went from 3.7 to 7.7?



II.8

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A. No.

2

Q. You are saying you are not in
a position to comment as to whether you could make
the calculations as to what level the potassium would
rise to in the body if there were absolutely no
kidney function at all?

3

A. I don't think anybody could,
Mr. Shinehoft, it would have to be - well, I shouldn't
say that because I expect there are people who could.
One would have to look at any level that you came
up with and that would have to have very controlled
circumstances. Therefore if one looked at a sick
baby who has acidosis and all of those things it would
not apply at all. All I can say is that clinically
from my own experience ; I have seen babies go from
health to death in a few hours.

4

Q. Doctor, I want to talk to you
specifically about potassium levels.

5

A. That is what I was saying, due
to potassium in cells is what I am saying.

6

Q. You speak of acidosis, was
this baby in acidosis on his arrival at the HFC?

7

A. I don't believe he was, no.

8

Q. What was his general condition
at arrival at HFC?

9

10



11.9

1

2 A. Well, I guess we could read our
3 notes here and see.

4

5 Q. Would I be fairly characterizing
6 his arrival at HFC? I can tell you the clinicians
7 who examined him ---

8

9 A. If you say that I believe you,
10 I may have to go back and check.

11

12 Q. I believe and I am not
13 incorrectly restating the evidence, the clinicians
14 who examined him gave that indication?

15

A. I believe that is true, yes.

16

Q. So he didn't seem to be in
any kind of danger on his arrival at HFC?

17

A. That is correct.

18

Q. Getting back to the potassium
level, Doctor, you are saying it is impossible to
calculate what the rise in the potassium levels would
be assuming there were absolutely no kidney function,
given a certain level, and given the child's weight,
and given the child's certain volume?

19

20 A. Gee, that would be a difficult
calculation, Mr. Shinehoft, to get a blood volume
and tissue that has no kidney function, and if he has
no kidney function he must surely be ill, very ill.

21

22

23



II.10

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(2) 1

2 Q. Maybe we can do it this way.

3 Let's talk about dialysis, you have mentioned dialysis.

4 A. Yes.

5 Q. And I understand that someone
6 on dialysis, they are not hooked up to this machine
7 24 hours a day, is that correct?

8 A. No, there are different ways,
9 peritoneal and blood dialysis, yes.

10 Q. And it is my understanding that
11 they come back periodically to be hooked onto the
12 machine for dialysis?

13 A. Yes.

14 Q. And it is my understanding that
15 most, if I can generalize, go for a dialysis every
16 third day, is that correct?

17 A. Yes, I wouldn't - I can't
18 speak to that because I am not involved in the
19 dialysis program. That is a perfectly legitimate
20 scenario, yes.

21 Q. So then would it be fair to
22 conclude from that, Doctor, that it would take three
23 days for the body to produce toxic levels of potassium
24 and require the excretion by the method of dialysis?

25 A. Well, I don't know that
because I think that comes down to the size of the



II.11

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patient and a whole lot of other variables that come into it. I don't know whether there is that kind of information on one month old babies.

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Q. I was under the impression, Doctor, that you could take a baby and have the baby's weight, have a level of potassium and extrapolate as to what that level might be in six or twelve hours. If I were to tell you that this was done, Doctor, and it would be mathematically impossible for this baby to produce naturally potassium in its body to go from a level of 3.7 to

7.7, would you disagree with me, Doctor?

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A. I would certainly want to take those figures to someone else to look at, yes, because as I say I have seen babies who with an infection that triggered an acute adrenal insufficiency, I have certainly seen them go to what was considered to be good health to death in that length of time, yes, due to potassium.

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Q. You are not in a position to do the calculations to disagree with me?

A. I wouldn't even try to.

Q. You must admit, Doctor, that is one considerable level rise from 3.7 to 7.7 in less than 12 hours?



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A. No, it is not, because as we

said before a very minimal change, because so much is
in the cells, a very minimal change in cells can
account - there is a new book on potassium and I can
enter it into evidence and I will, I don't know
whether I wrote down any of the facts concerning that
particular point, or not.

Q. Let me ask you this, Doctor --

A. But I would like to just go
on to say I would certainly feel that those levels
could change in that magnitude in a sick baby.

THE COMMISSIONER: What would cause
the change, Doctor?

THE WITNESS: Well, in people who
do have adrenal insufficiency, Mr. Commissioner,
people with Addison's disease or any other form of
an infection or stress can tilt them into that
situation in a matter of hours.

THE COMMISSIONER: That is the leak
from the adrenal to the blood?

THE WITNESS: I suppose it comes out
of the cells and into the serum.

THE COMMISSIONER: There is no
potassium presumably going into the --

THE WITNESS: Yes.



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THE COMMISSIONER: -- it is just

coming out and it is changing its position, is that it?

THE WITNESS: Yes. You see, I guess

the situation par excellence, if you will, is something

I mentioned the other day. People, mainly adults,

but I have had it happen in children, older children,

who have been on cortisone for some reason or other,

this particular patient I am talking about was on it

for ulcerated colitis. About two years after he had

come off cortisone and was supposedly normal he got

a mild flu-like illness and was dead in a matter of

hours, because his adrenals they were suppressed by

that cortisone, they were obviously doing as much to

keep him going all right until he got into a bad

situation. He got an infection on top of it and it

tilted him and he was dead in several hours.

(3)

So a situation in somebody who has

any problem with their adrenals who has, if you will,

stress or infection, can be tilted very quickly, so

that is all I am saying to Mr. Shinehoft.

THE COMMISSIONER: What is the function

of the adrenals?

THE WITNESS: What is --

THE COMMISSIONER: What is the function?

THE WITNESS: It is a pretty complex



II.14

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2 little organ for its size.

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4 THE COMMISSIONER: How is it affected
5 if it does have stress or something like this, how
6 does it produce the ---

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8 THE WITNESS: What it does it makes
9 our hormone, one hormone that controls salt and water
10 metabolism and keeps it from going out in the kidney,
11 let's say, would be a reasonable enough explanation.
12 It also makes another hormone that controls the sugar
13 in the blood and if it is not there the sugar is way
14 down, and that is another thing at St. Joseph's
15 Hospital the baby's blood sugar was listed as being
16 very low.

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J/DP/ak

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2 The third thing it does it makes the sex
3 hormones and therefore if they are not there people
4 lose - well, if they are little babies they don't
5 masculinize if they are supposed to. If they are
6 older people they lose their sex drive and all those
7 things, unless the hormones are replaced. It has
8 those three functions. In this specific instance,
9 it is the salt and water controlling part that is at
10 fault and it can occur by itself or with the other
11 two parts thrown in or sometimes variations of them.

12 THE COMMISSIONER: What is the
13 problem with hemolysis testing?

14 THE WITNESS: Once the hemolysis, that is
15 what I was getting at a little bit with Inwood, if
16 you heat red cells it destroys the membrane and
17 all that potassium gets out, so if 95 percent of it
18 is in the red cells and only about 1 per cent gets
19 out it can give you levels in the blood stream that
20 are astronomical and they are false.. The lab
21 won't even work them out. They usually phone you
22 back and say, get another specimen.

23 THE COMMISSIONER: How do they know?

24 THE WITNESS: If you look at it,
25 when they spin it down, instead of the serum looking
white, it will look pink.



Bain, cr.ex.
(Shinehoft)

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THE COMMISSIONER: I see.

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MR. SHINEHOFT: Q. Doctor, you indicated that there may be a release of this potassium from inside the cell to outside the cell which would cause the elevation of the potassium level. Is that correct?

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A. Yes, that is correct, and you know no matter how you look at the situation that had to have happened.

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Q. With digoxin, my understanding is that there is a competition for the binding sites.

A. That is right.

Q. And that you have digoxin coming into the tissue and forcing the potassium out. Is that also correct, Doctor?

A. They compete at a pump. I was just thinking of something else, there, if you will excuse me for one moment, I will go back to it. But I was just thinking in your previous statements about potassium going up that fast, we have in fact that the potassium did go up that fast so either it was released from the cells or someone gave the baby potassium.

Q. Or the third one?

A. Yes.



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Q. It was released from the cells
as a result possibly of either --

A. No matter what way it was
released, it was released and it went up that fast.

Q. I gave you two possibilities,
did I not, Doctor, either you were given it or it
is released from inside the cell?

A. Potassium is going back and
forth all the time.

Q. Or shifting across the cells.

A. Yes, it happens that fast.
I thought the point of what you were saying before
was it could not happen in that amount of time and
it did happen in that time.

Q. What I'm saying, Doctor, my
point was that it could not happen through pure
lack of kidney function. That was the point I was
trying to make. If you cut off kidney function which
excretes 95 per cent of the potassium and tried to
calculate what the level might be, if there is
absolutely no kidney function that level could not
go from 3.7 to 7.7 purely as a result of lack of
kidney function.

A. I am sorry, but I do not think
kidney function entered into this one at all.



1

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Q. Did I not ask you, Doctor, you
excrete it one of three ways, either through --

3

A. Yes, but I am talking about,
getting back to Hines there was no question about
his kidney function when he came to the Hospital for
Sick Children.

4

THE COMMISSIONER: Pacsai.

5

THE WITNESS: I'm sorry, Pacsai.

6

MR. SHINEHOFT: Q. That is exactly
my point, Doctor, that means one of two or three
things must have happened. Either he was given
potassium or he was given digoxin or the potassium
in the cell went outside the cells into the serum,
for whatever reason.

7

A. And the reason that I said
it could have been was adrenal insufficiency.

8

Q. And my question to you, Doctor,
could it not have been as well as a result of
digitalis intoxication?

9

A. As I say, I can turn that one
around and this is for the clinical pharmacologist
to answer, but we have a patient whose serum level of
digoxin was 1.9, who potassium level went up to, I
believe the figure was 14, it was unbelievable -- none
of these patients. The digoxin level at that time

24

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Bain, cr.ex
(Shinehoff)

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JJ5

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2 was 5.2. The potassium was brought back down by the
3 methods that Dr. Costigan used. The digoxin was
4 repeated so it was a good test and it was back down
5 to that level.

6 So all I am saying is it is a two-way
7 street as far as we know and this is what I think
8 the clinical pharmacologists are going to have to
9 decide.

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JJ2-1

1 Q. Let me ask you this,

2 Doctor, just dealing with the question of transient
3 adrenal insufficiency for a second.

4 It is your opinion that there are
5 no pathological findings on post mortem of this
6 condition?

7 A. That is the point because -
8 there are two answers to that and probably the one
9 they are referring to, they did not die, but there
10 are situations, and I think Dr. Spielberg referred
11 to it and he used the fancy name, as I said the
12 other day, of pathophysiology. So there can be
13 things wrong with the adrenal gland or many other
14 glands in the body where certain enzymes and things
15 cannot be manufactured that there is no sign of at
autopsy, yes.

16 Q. My question to you very
17 simply is, what is your opinion as to whether there
18 can or cannot be any pathological findings on
19 autopsy as far as transient adrenal insufficiency?

20 A. I think you came back to
me on that before and I said, by semantics or what-
ever, if it is transient then they should not die
21 and therefore you should not find anything. But I
22 would give you the situation in which a patient had
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2 trouble putting out his adrenal hormones, got in
3 a stressful situation that did in fact kill him. I
4 am saying in that patient I guess you would not
5 find anything because it is a business where there
6 is nothing to find because it would appear to be
7 whether or not they can produce it. It is a chemical
business.

8

Q. If I were to say to you,
9 Doctor, that there are some endocrinologists that
10 are of the opinion that the condition of transient
11 adrenal insufficiency will leave an abnormality of
12 the adrenal glands either in size or in architecture,
would you agree or disagree with that?

13

A. I cannot agree and I cannot
14 disagree because, you see, what you are asking is
15 that, as I say, first of all they are not supposed
16 to die but I also said the other day that you are
17 in difficulty when you are going to talk about
18 atrophy here, which they will do by weight, is
19 for a very good reason the adrenal during pregnancy
and during fetal life gets up to being almost as
20 big as the kidney.

21

Q. I believe you said it was
22 30 per cent?

23

A. I believe the ratio was one

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2 to three.

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Q. One to 30 in adult life?

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A. In utero it is about one to
three and then when it settles down after whatever
length of time it is one to 29 or 30 but there is
a transitional period of a few months, and this is
what this article by Geppert that I will give you
postulates that there must be patients where, during
that transition, the patient is in trouble.

10

MR. SHINEHOFT: Mr. Commissioner, I
am in your hands. I intend to be a little bit

11 longer with this witness.

12

THE COMMISSIONER: We will rise now.

13

MR. SHINEHOFT: Is Dr. Bain coming
back precisely at 10 o'clock tomorrow morning?

14

THE COMMISSIONER: No, I think one
thing he is not doing is coming back at 10
o'clock precisely because he is attending something
else that does not end until 10. Are you worried
about the bus from Hamilton?

19

20

MR. SHINEHOFT: Yes.

21

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THE COMMISSIONER: Well I think if we
are going to give him until 10:15 we will give you
until 10:15 as well.

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MR. SHINEHOFT: Thank you very much.



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THE COMMISSIONER: I don't know about
the "Go" - whatever it is - the bus, I don't know
whether we can give them till 10:15 too but assuming
that you are not hitting a snow storm or something
you have at least until 10:15 to come and if there
is a snow storm then we will wait for you.

3

4

MR. SHINEHOFT: Thank you very much.

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THE COMMISSIONER: Anything to report
on? Until 10 tomorrow then or whatever time Dr.
Bain appears. No, Dr. Bain, do not hurry - wait until
it is finished.

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---Whereupon the hearing adjourned at 4:55 until
10:00 a.m. Wednesday the 9th day of November,
1983.

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